

SEQUENCE LISTING

<110> Tang, Y. Tom
Zhou, Ping
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Asundi, Vinod
Zhang, Jie
Ren, Feiyan
Chen, Rui-hong
Zhao, Qing A.
Xue, Aidong J.
Yang, Yonghong
Wehrman, Tom
Wang, Jian-Rui
Ma, Yunqing
Wang, Dunrui
Tillinghast, John
Drmanac, Radoje T.

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Polypeptides

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Arg Lys Leu Ser Gly Ser Gly Asp Ser Trp Ala Arg Ala Pro Thr His
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Lys Ser Pro Ser Thr Pro Glu Gln Gly Val Gln Arg Ser Cys Ser Ser
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68 73 78 83

tat aat gtg tta agc ccc acc tac aag cag aga aat gaa gac ttc aga 643
Tyr Asn Val Leu Ser Pro Thr Tyr Lys Gln Arg Asn Glu Asp Phe Arg
84 89 94 99

aag ctc ttt aag cag ctt cca gac acg gag cgc ctc att gtt gat tac 691
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Ser Cys Ala Leu Gln Arg Asp Ile Leu Leu Gln Gly Arg Leu Tyr Leu
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Ser Glu Asn Trp Ile Cys Phe Tyr Ser Asn Ile Phe Arg Trp Glu Thr
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148 153 158 163

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Lys His Phe Phe Thr Ser Phe Gly Ala Arg Asp Arg Thr Tyr Met Met	
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Met Phe Arg Leu Trp Gln Asn Ala Leu Leu Glu Lys Pro Leu Cys Pro	
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Thr Met Gly Tyr Cys Glu Glu Ile Pro Val Glu Glu Asn Glu Val Asn	
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Ala Leu Glu Gly Asp Gly Ser Leu Glu Lys Glu Leu Ala Ile Asp Asn	
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Ser Gly Arg Gln Tyr Val Asn Glu Val Phe Asn Phe Ser Val Asp Lys	
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Leu Tyr Asp Leu Leu Phe Thr Asn Ser Pro Phe Gln Arg Asp Phe Met	

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Glu Asn Gly Asn Gln Ser Arg Val Ile Leu Tyr Thr Ile Thr Leu Thr				
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Asn Pro Leu Ala Pro Lys Thr Ala Thr Val Arg Glu Thr Gln Thr Met				
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Tyr Lys Ala Ser Gln Glu Ser Glu Cys Tyr Val Ile Asp Ala Glu Val				
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Tyr Thr Leu Thr Arg Val Ala Arg Asn Lys Ser Arg Leu Arg Val Ser				
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Ile Glu Lys Asn Phe Trp Ser Gly Leu Glu Asp Tyr Phe Arg His Leu				
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Gly	Ile	Lys	Ser	Glu	Asp	Glu	Ala	Gly	Cys	Ser	Ser	Val	Asp	Glu	Glu	
374					379					384					389	
agt	tac	aag	act	ctg	aag	cag	cag	gaa	gaa	gta	ttt	cga	aat	tta	gat	1375
Ser	Tyr	Lys	Thr	Leu	Lys	Gln	Gln	Glu	Glu	Val	Phe	Arg	Asn	Leu	Asp	
390					395					400					405	
gct	cag	tat	gaa	atg	gca	aga	tca	caa	acc	cac	aca	caa	aga	gga	atg	1423
Ala	Gln	Tyr	Glu	Met	Ala	Arg	Ser	Gln	Thr	His	Thr	Gln	Arg	Gly	Met	
406					411					416					421	
ggt	ttg	ggt	ttc	aca	tct	tca	atg	cga	gga	atg	gat	gca	gtt	tga	aaa	1471
Gly	Leu	Gly	Phe	Thr	Ser	Ser	Met	Arg	Gly	Met	Asp	Ala	Val	*		
422					427					432						
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caccaaacag	ctagcactct	agcttgcattg	ggtgttgcat	tgactttaat	ttattgaaaa											1591
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accacttcc	attaaacttg	acaggactat	agaaggataa	tatttttttag	ttcatgaatt											1711
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gtgtccgctg	tcttgtgtac	ttttgtactt	aacctgtgtac	agttattttc	atctcttgaa											1831
acatgaaaga	aatgttatgt	agatgttctt	tagaagatct	ggccatttgg	tacataatcc											1891
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aggggggaaag tc      atg ggc agg gcc tgg tgt ggg atg tgg agg aga cgg      168
                    Met Gly Arg Ala Trp Cys Gly Met Trp Arg Arg Arg
                    1          5          10

cgc ccg ggg agg agg agc gct gtg ccc agg tgg cct cac ttg tca tct      216
Arg Pro Gly Arg Arg Ser Ala Val Pro Arg Trp Pro His Leu Ser Ser
13          18          23          28

caa agt ggc gtc gaa ccc cct gac agg tgg acg gga acc ccc ggc tgg      264
Gln Ser Gly Val Glu Pro Pro Asp Arg Trp Thr Gly Thr Pro Gly Trp
29          34          39          44

ccc tcc aga gac cag gag gcc cct ggc tca atg atg cca cct gca gct      312
Pro Ser Arg Asp Gln Glu Ala Pro Gly Ser Met Met Pro Pro Ala Ala
45          50          55          60

gcc caa ccc tcc gcc cat ggt gcc ctt gtt cca cct gcc acc gct cat      360
Ala Gln Pro Ser Ala His Gly Ala Leu Val Pro Pro Ala Thr Ala His
61          66          71          76

gaa cct gtg gat cac cca gct ctg cac tgg ctt gcc tgc tgc tgc tgc      408
Glu Pro Val Asp His Pro Ala Leu His Trp Leu Ala Cys Cys Cys Cys
77          82          87          92

ctc agt tta cct ggg cag ttg ccc ctg gct atc cgg ctg gga tgg gac      456
Leu Ser Leu Pro Gly Gln Leu Pro Leu Ala Ile Arg Leu Gly Trp Asp
93          98          103          108

ttg gac tta gaa gca ggc ccc tcc tct gga aag ctg tgt cct cgg gcc      504
Leu Asp Leu Glu Ala Gly Pro Ser Ser Gly Lys Leu Cys Pro Arg Ala
109          114          119          124

agg agg tgg cag cct cta cct tcc tga gacag ggaccctttt ctgtccatca      556
Arg Arg Trp Gln Pro Leu Pro Ser *
125          130

gaggacagct gtatgaagac acagagagaa ggcagccatc tgtaagccag gaagagagcc      616

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gaaataagca cctgctgttt aaaaaaaaaa aa      708
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Met Lys Thr Leu Phe Leu	
1	
ggt gtc acg ctc ggc ctg gcc gct gcc ctg tcc ttc acc ctg gag gag	160
Gly Val Thr Leu Gly Leu Ala Ala Ala Leu Ser Phe Thr Leu Glu Glu	
7 12 17 22	
gag gat atc aca ggg acc tgg tac gtg aag gcc atg gtg gtc gat aag	208
Glu Asp Ile Thr Gly Thr Trp Tyr Val Lys Ala Met Val Val Asp Lys	
23 28 33 38	
gac ttt ccg gag gac agg agg ccc agg aag gtg tcc cca gtg aag gtg	256
Asp Phe Pro Glu Asp Arg Arg Pro Arg Lys Val Ser Pro Val Lys Val	
39 44 49 54	
aca gcc ctg ggc ggt ggg aac ttg gaa gcc acg ttc acc ttc atg agg	304
Thr Ala Leu Gly Gly Gly Asn Leu Glu Ala Thr Phe Thr Phe Met Arg	
55 60 65 70	
gag gat cgg tgc atc cag aag aaa atc ctg atg cgg aag acg gag gag	352
Glu Asp Arg Cys Ile Gln Lys Lys Ile Leu Met Arg Lys Thr Glu Glu	
71 76 81 86	
cct ggc aaa ttc agc gcc tat ggg ggc agg aag ctc ata tac ctg cag	400
Pro Gly Lys Phe Ser Ala Tyr Gly Gly Arg Lys Leu Ile Tyr Leu Gln	
87 92 97 102	
gag ctg ccc ggg acg gac gac tac gtc ttt tac tgc aaa gac cag cgc	448
Glu Leu Pro Gly Thr Asp Asp Tyr Val Phe Tyr Cys Lys Asp Gln Arg	
103 108 113 118	
cgt ggg ggc ctg cgc tac atg gga aag ctt gtg gca tct gct ccc tgc	496
Arg Gly Gly Leu Arg Tyr Met Gly Lys Leu Val Ala Ser Ala Pro Cys	
119 124 129 134	
agg gcc gtg ccg ctg tcc cca cgt cgg ctc acc tgg cca cct cac ctg	544
Arg Ala Val Pro Leu Ser Pro Arg Arg Leu Thr Trp Pro Pro His Leu	
135 140 145 150	
cag gta gga atc cta ata cca acc tgg agg ccc tgg aag aat tta aga	592
Gln Val Gly Ile Leu Ile Pro Thr Trp Arg Pro Trp Lys Asn Leu Arg	
151 156 161 166	
aat tgg tgc agc aca agg gac tct cgg agg agg aca ttt tca tgc ccc	640
Asn Trp Cys Ser Thr Arg Asp Ser Arg Arg Arg Thr Phe Ser Cys Pro	

167	172	177	182	
tgc aga cgg gaa gct	gcg ttc tcg aac act	agg cag ccc ccg ggt ctg		688
Cys Arg Arg Glu Ala	Ala Phe Ser Asn Thr	Arg Gln Pro Pro Gly Leu		
183	188	193	198	
cac ctc cag agc cca	ccc tac cac cag aca	cag agc ccg gac cac ctg		736
His Leu Gln Ser Pro	Pro Tyr His Gln Thr	Gln Ser Pro Asp His Leu		
199	204	209	214	
gac cta ccc tcc agc	cat gac cct tcc ctg	ctc cca ccc acc tga		781
Asp Leu Pro Ser Ser	His Asp Pro Ser Leu	Leu Pro Pro Thr *		
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Met Arg Gln Lys Arg	Lys Gly Asp Leu Ser	Pro Ala Glu Leu Met Met
1	5	10 15
ctg act ata gga gat	gtt att aaa caa ctg	att gaa gcc cac gag cag
Leu Thr Ile Gly Asp	Val Ile Lys Gln Leu	Ile Glu Ala His Glu Gln
17	22	27 32
ggg aaa gac atc gat	cta aat aag gtg aaa	acc aag aca gct gcc aaa
Gly Lys Asp Ile Asp	Leu Asn Lys Val Lys	Thr Lys Thr Ala Ala Lys
33	38	43 48
tat ggc ctt tct gcc	cag ccc cgc ctg gtg	gat atc att gct gcc gtc
Tyr Gly Leu Ser Ala	Gln Pro Arg Leu Val	Asp Ile Ile Ala Ala Val
49	54	59 64
cct cct cag tat cgc	aag gtc ttg atg ccc	aag tta aag gcg aaa ccc
Pro Pro Gln Tyr Arg	Lys Val Leu Met Pro	Lys Leu Lys Ala Lys Pro
65	70	75 80
atc aga act gct agt	ggg att gct gtc gtg	gct gtg atg tgc aaa ccc
Ile Arg Thr Ala Ser	Gly Ile Ala Val Val	Ala Val Met Cys Lys Pro
81	86	91 96
cac aga tgt cca cac	atc agt ttt aca gga	aat ata tgt gta tac tgc
His Arg Cys Pro His	Ile Ser Phe Thr Gly	Asn Ile Cys Val Tyr Cys
97	102	107 112

cct ggt gga cct gat tct gat ttt gag tat tcc acc cag tct tac act	441
Pro Gly Gly Pro Asp Ser Asp Phe Glu Tyr Ser Thr Gln Ser Tyr Thr	
113 118 123 128	
ggc tat gag cca acc tcc atg aga gct atc cgt gcc aga tat gac cct	489
Gly Tyr Glu Pro Thr Ser Met Arg Ala Ile Arg Ala Arg Tyr Asp Pro	
129 134 139 144	
ttc cta cag aca aga cac cga ata gaa cag tta aaa caa ctt ggt cat	537
Phe Leu Gln Thr Arg His Arg Ile Glu Gln Leu Lys Gln Leu Gly His	
145 150 155 160	
agt gtg gat aaa gtg gag ttt att gtg atg ggt gga acg ttt atg gcc	585
Ser Val Asp Lys Val Glu Phe Ile Val Met Gly Gly Thr Phe Met Ala	
161 166 171 176	
ctt cca gaa gaa tac aga gat tat ttt att cga aat tta cat gat gcc	633
Leu Pro Glu Glu Tyr Arg Asp Tyr Phe Ile Arg Asn Leu His Asp Ala	
177 182 187 192	
tta tca gga cat act tcc aac aat att tac gag gca gtc aag tat tct	681
Leu Ser Gly His Thr Ser Asn Asn Ile Tyr Glu Ala Val Lys Tyr Ser	
193 198 203 208	
gag aga agc ctc aca aag tgt att gga att act att gaa acc aga cca	729
Glu Arg Ser Leu Thr Lys Cys Ile Gly Ile Thr Ile Glu Thr Arg Pro	
209 214 219 224	
gat tac tgc atg aag cga cat tta agt gac atg ttg acc tat ggc tgc	777
Asp Tyr Cys Met Lys Arg His Leu Ser Asp Met Leu Thr Tyr Gly Cys	
225 230 235 240	
aca agg ctg gag att ggg gtg cag agt gtt tat gaa gat gtg gct aga	825
Thr Arg Leu Glu Ile Gly Val Gln Ser Val Tyr Glu Asp Val Ala Arg	
241 246 251 256	
gac acc aac agg ggc cac act gtg aag gca gtg tgt gag tca ttt cac	873
Asp Thr Asn Arg Gly His Thr Val Lys Ala Val Cys Glu Ser Phe His	
257 262 267 272	
ctg gcc aaa gat tcc ggt ttt aaa gtg gtg gcc cat atg atg cct gac	921
Leu Ala Lys Asp Ser Gly Phe Lys Val Val Ala His Met Met Pro Asp	
273 278 283 288	
ctg cca aac gtg gga cta gaa aga gac att gaa cag ttc aca gag ttt	969
Leu Pro Asn Val Gly Leu Glu Arg Asp Ile Glu Gln Phe Thr Glu Phe	
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ttt gag aac cct gct ttt cgt ccc gat ggg ctg aaa ctc tat cct acc	1017
Phe Glu Asn Pro Ala Phe Arg Pro Asp Gly Leu Lys Leu Tyr Pro Thr	
305 310 315 320	
ctg gtg att cgt ggg acc ggg ctt tat gag ctt tgg aaa tca gga aga	1065
Leu Val Ile Arg Gly Thr Gly Leu Tyr Glu Leu Trp Lys Ser Gly Arg	
321 326 331 336	
gat aag agt tac tct cct agt gac ctg gtt gaa ttg gtg gct cgg atc	1113

Asp Lys Ser Tyr Ser Pro Ser Asp Leu Val Glu Leu Val Ala Arg Ile	
337 342 347 352	
cta gcc ctc gtg cct cca tgg act cga gtg tac cga gta cag agg gat	1161
Leu Ala Leu Val Pro Pro Trp Thr Arg Val Tyr Arg Val Gln Arg Asp	
353 358 363 368	
att cca atg cct tta gtt agc tca gga gta gag cat ggt aac ctg aga	1209
Ile Pro Met Pro Leu Val Ser Ser Gly Val Glu His Gly Asn Leu Arg	
369 374 379 384	
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Glu Leu Ala Leu Ala Arg Met Lys Asp Leu Gly Ile Gln Cys Arg Asp	
385 390 395 400	
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Val Arg Thr Arg Glu Val Gly Ile Gln Glu Ile His His Lys Val Arg	
401 406 411 416	
cca tac cag gtt gaa ttg gta agg aga gat tat gtt gca aat ggt ggc	1353
Pro Tyr Gln Val Glu Leu Val Arg Arg Asp Tyr Val Ala Asn Gly Gly	
417 422 427 432	
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Trp Glu Thr Phe Leu Ser Tyr Glu Asp Pro Asp Gln Asp Ile Leu Ile	
433 438 443 448	
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Gly Leu Leu Arg Leu Arg Lys Cys Ser Glu Glu Thr Phe Arg Phe Glu	
449 454 459 464	
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Leu Gly Gly Gly Val Ser Ile Val Arg Glu Leu His Val Tyr Gly Ser	
465 470 475 480	
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Val Val Pro Val Ser Ser Arg Asp Pro Thr Lys Phe Gln His Gln Gly	
481 486 491 496	
ttt ggc atg ctg ctg atg gag gaa gca gaa aga ata gct aga gaa gaa	1593
Phe Gly Met Leu Leu Met Glu Glu Ala Glu Arg Ile Ala Arg Glu Glu	
497 502 507 512	
cat ggg tct ggg aaa atc gct gtg ata tca gga gtg gat gtc ctg ggg	1641
His Gly Ser Gly Lys Ile Ala Val Ile Ser Gly Val Asp Val Leu Gly	
513 518 523 528	
cag agg cag agg gga ggc cac cac aga agc tgt tca ctc tag gcacttt	1690
Gln Arg Gln Arg Gly Gly His His Arg Ser Cys Ser Leu *	
529 534 539	
gcaaggggtc ggcaccagga attattatag aaagatcggc tacagattac aaggcccgtg	1750
catggtgaag atgctgaaat aatggccaca ccagtccact cttctgcagt atcctccctg	1810
gcagaacacg gagaatcagg atttcttaaa tactcaacag agaggctgag cagagcaaat	1870

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gggggggcttc accctcatcc cgcagctgca gagactggaa actgccttca aggccacggc 1930
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<212> DNA
<213> Homo sapiens

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Met Arg Gln Lys Arg Lys Gly Asp Leu Ser Pro Ala Glu Leu Met Met
1 5 10 15

ctg act ata gga gat gtt att aaa caa ctg att gaa gcc cac gag cag 153
Leu Thr Ile Gly Asp Val Ile Lys Gln Leu Ile Glu Ala His Glu Gln
17 22 27 32

ggg aaa gac atc gat cta aat aag gtg aaa acc aag aca gct gcc aaa 201
Gly Lys Asp Ile Asp Leu Asn Lys Val Lys Thr Lys Thr Ala Ala Lys
33 38 43 48

tat ggc ctt tct gcc cag ccc cgc ctg gtg gat atc att gct gcc gtc 249
Tyr Gly Leu Ser Ala Gln Pro Arg Leu Val Asp Ile Ile Ala Ala Val
49 54 59 64

cct cct cag tat cgc aag gtc ttg atg ccc aag tta aag gcg aaa ccc 297
Pro Pro Gln Tyr Arg Lys Val Leu Met Pro Lys Leu Lys Ala Lys Pro
65 70 75 80

atc aga act gct agt ggg att gct gtc gtg gct gtg atg tgc aaa ccc 345
Ile Arg Thr Ala Ser Gly Ile Ala Val Val Ala Val Met Cys Lys Pro
81 86 91 96

cac aga tgt cca cac atc agt ttt aca gga aat ata tgt gta tac tgc 393
His Arg Cys Pro His Ile Ser Phe Thr Gly Asn Ile Cys Val Tyr Cys
97 102 107 112

cct ggt gga cct gat tct gat ttt gag tat tcc acc cag tct tac act 441
Pro Gly Gly Pro Asp Ser Asp Phe Glu Tyr Ser Thr Gln Ser Tyr Thr
113 118 123 128

ggc tat gag cca acc tcc atg aga gct atc cgt gcc aga tat gac cct 489

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Gly Tyr Glu Pro Thr Ser Met Arg Ala Ile Arg Ala Arg Tyr Asp Pro	
129 134 139 144	
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Phe Leu Gln Thr Arg His Arg Ile Glu Gln Leu Lys Gln Leu Gly His	
145 150 155 160	
agt gtg gat aaa gtg gag ttt att gtg atg ggt gga acg ttt atg gcc	585
Ser Val Asp Lys Val Glu Phe Ile Val Met Gly Gly Thr Phe Met Ala	
161 166 171 176	
ctt cca gaa gaa tac aga gat tat ttt att cga aat tta cat gat gcc	633
Leu Pro Glu Glu Tyr Arg Asp Tyr Phe Ile Arg Asn Leu His Asp Ala	
177 182 187 192	
tta tca gga cat act tcc aac aat att tac gag gca gtc aag tat tct	681
Leu Ser Gly His Thr Ser Asn Asn Ile Tyr Glu Ala Val Lys Tyr Ser	
193 198 203 208	
gag aga agc ctc aca aag tgt att gga att act att gaa acc aga cca	729
Glu Arg Ser Leu Thr Lys Cys Ile Gly Ile Thr Ile Glu Thr Arg Pro	
209 214 219 224	
gat tac tgc atg aag cga cat tta agt gac atg ttg acc tat ggc tgc	777
Asp Tyr Cys Met Lys Arg His Leu Ser Asp Met Leu Thr Tyr Gly Cys	
225 230 235 240	
aca agg ctg gag att ggg gtg cag agt gtt tat gaa gat gtg gct aga	825
Thr Arg Leu Glu Ile Gly Val Gln Ser Val Tyr Glu Asp Val Ala Arg	
241 246 251 256	
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Asp Thr Asn Arg Gly His Thr Val Lys Ala Val Cys Glu Ser Phe His	
257 262 267 272	
ctg gcc aaa gat tcc ggt ttt aaa gtg gtg gcc cat atg atg cct gac	921
Leu Ala Lys Asp Ser Gly Phe Lys Val Val Ala His Met Met Pro Asp	
273 278 283 288	
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Leu Pro Asn Val Gly Leu Glu Arg Asp Ile Glu Gln Phe Thr Glu Phe	
289 294 299 304	
ttt gag aac cct gct ttt cgt ccc gat ggg ctg aaa ctc tat cct acc	1017
Phe Glu Asn Pro Ala Phe Arg Pro Asp Gly Leu Lys Leu Tyr Pro Thr	
305 310 315 320	
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Leu Val Ile Arg Gly Thr Gly Leu Tyr Glu Leu Trp Lys Ser Gly Arg	
321 326 331 336	
gat aag agt tac tct cct agt gac ctg gtt gaa ttg gtg gct cgg atc	1113
Asp Lys Ser Tyr Ser Pro Ser Asp Leu Val Glu Leu Val Ala Arg Ile	
337 342 347 352	
cta gcc ctc gtg cct cca tgg act cga gtg tac cga gta cag agg gat	1161
Leu Ala Leu Val Pro Pro Trp Thr Arg Val Tyr Arg Val Gln Arg Asp	

353	358	363	368	
att cca atg cct tta gtt agc tca gga gta	gag cat ggt aac ctg aga	1209		
Ile Pro Met Pro Leu Val Ser Ser Gly Val	Glu His Gly Asn Leu Arg			
369	374	379	384	
gag ctg gca ctt gca aga atg aaa gac ctc	gga ata cag tgt cga gat	1257		
Glu Leu Ala Leu Ala Arg Met Lys Asp Leu	Gly Ile Gln Cys Arg Asp			
385	390	395	400	
gtg aga acc aga gaa gtt gga atc caa gaa att	cat cac aaa gta cgg	1305		
Val Arg Thr Arg Glu Val Gly Ile Gln Glu	Ile His His Lys Val Arg			
401	406	411	416	
cca tac cag gtt gaa ttg gta agg aga gat	tat gtt gca aat ggt ggc	1353		
Pro Tyr Gln Val Glu Leu Val Arg Arg Asp	Tyr Val Ala Asn Gly Gly			
417	422	427	432	
tgg gaa aca ttc ttg tca tac gaa gac cca	gat caa gac att ttg att	1401		
Trp Glu Thr Phe Leu Ser Tyr Glu Asp Pro	Asp Gln Asp Ile Leu Ile			
433	438	443	448	
ggc ctc cta cga tta cgc aag tgt tca gaa gaa	act ttc cgt ttc gaa	1449		
Gly Leu Leu Arg Leu Arg Lys Cys Ser Glu	Glu Thr Phe Arg Phe Glu			
449	454	459	464	
ttg ggt gga ggt gtc tcc ata gta cga gag	ctg cat gtg tat ggg agt	1497		
Leu Gly Gly Gly Val Ser Ile Val Arg Glu	Leu His Val Tyr Gly Ser			
465	470	475	480	
gtg gtc cct gtg agc agc cgg gat cct act	aaa ttt cag cat cag gga	1545		
Val Val Pro Val Ser Ser Arg Asp Pro Thr	Lys Phe Gln His Gln Gly			
481	486	491	496	
ttt ggc atg ctg ctg atg gag gaa gca gaa	aga ata gct aga gaa gaa	1593		
Phe Gly Met Leu Leu Met Glu Glu Ala Glu	Arg Ile Ala Arg Glu Glu			
497	502	507	512	
cat ggg tct ggg aaa atc gct gtg ata tca	ggg gtc ggc acc agg aat	1641		
His Gly Ser Gly Lys Ile Ala Val Ile Ser	Gly Val Gly Thr Arg Asn			
513	518	523	528	
tat tat aga aag atc ggc tac aga tta caa	ggc ccg tac atg gtg aag	1689		
Tyr Tyr Arg Lys Ile Gly Tyr Arg Leu Gln	Gly Pro Tyr Met Val Lys			
529	534	539	544	
atg ctg aaa taa tgg ccacaccagt ccactcttct	gcagtatcct ccctggcaga	1744		
Met Leu Lys *				
545				
acacggagaa tcaggatttc ttaaatactc aacagagagg	ctgagcagag caaatggggg	1804		
gcttcaccct catcccgag ctgcagagac tggaaactgc	cttcaaggcc acggctggtc	1864		
atctgtgac cacacccag atccgcctc tctgctgc	accccaaaaa atcacttgcg	1924		
tttttgaggc ttaaatcatc tatccagttt ctacattttg	catgaggcct gcaggtggcc	1984		

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ataaaaactga ttgtcattcg aaaaaaaaaa aa 2076

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<213> Homo sapiens

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Met Ala Glu Leu Gln Gln Leu Arg Val Gln Glu Ala Val
1 5 10

gag tcc atg gtg aag agt ctg gaa aga gag aac atc cgg aag atg cag 157
Glu Ser Met Val Lys Ser Leu Glu Arg Glu Asn Ile Arg Lys Met Gln
14 19 24 29

ggt ctc atg ttc cgg tgc agc gcc agc tgt tgt gag gac agc cag gcc 205
Gly Leu Met Phe Arg Cys Ser Ala Ser Cys Cys Glu Asp Ser Gln Ala
30 35 40 45

tcc atg aag cag gtg cac cag tgc atc gag cgc tgc cat gtg cct ctg 253
Ser Met Lys Gln Val His Gln Cys Ile Glu Arg Cys His Val Pro Leu
46 51 56 61

gct caa gcc cag gct ttg gtc acc agt gag ctg gag aag ttc cag gac 301
Ala Gln Ala Gln Ala Leu Val Thr Ser Glu Leu Glu Lys Phe Gln Asp
62 67 72 77

cgc ctg gcc cgg tgc acc atg cat tgc aac gac aaa gcc aaa gat tca 349
Arg Leu Ala Arg Cys Thr Met His Cys Asn Asp Lys Ala Lys Asp Ser
78 83 88 93

ata gat gct ggg agt aag gag ctt cag gtg aag cag cag ctg gac agt 397
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Cys Val Thr Lys Cys Val Asp Asp His Met His Leu Ile Pro Thr Met
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Met Asn Arg Glu Asp Arg Asn Val Leu Arg Met Lys Glu Arg Glu Arg
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cgg aat cag gaa att cag cag ggc gaa gac gcc ttc cca cct agc tct      155
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Pro Leu Phe Ala Glu Pro Tyr Lys Val Thr Ser Lys Glu Asp Lys Leu
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tca agt cgt att cag agt atg ctt gga aac tac gat gaa atg aag gat      251
Ser Ser Arg Ile Gln Ser Met Leu Gly Asn Tyr Asp Glu Met Lys Asp
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ttc ata gga gac aga tct ata cca aag ctt gtt gca att ccc aag cct      299
Phe Ile Gly Asp Arg Ser Ile Pro Lys Leu Val Ala Ile Pro Lys Pro
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Thr Val Pro Pro Ser Ala Asp Glu Lys Ser Asn Pro Asn Phe Phe Glu
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cag aga cat gga ggc tct cat cag agt agc aaa tgg act cca gta gga      395
Gln Arg His Gly Gly Ser His Gln Ser Ser Lys Trp Thr Pro Val Gly
   97               102              107              112

ccc gca ccc agc act tct cag tct cag aaa cgg tcc tca ggc tta cag      443
Pro Ala Pro Ser Thr Ser Gln Ser Gln Lys Arg Ser Ser Gly Leu Gln
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CCDS:3820.1

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Ser	His	Ser	Arg	Ser	His	Gly	Asn	Asp	His	His	Ser	Lys	Glu	His	Gln	
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cgc	tcc	aaa	tca	cct	cgg	gac	cct	gat	gca	aac	tgg	gat	tct	cct	tcc	731
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Glu	His	Tyr	Ser	Ser	Gln	Ser	His	Gly	Asn	Ser	Met	Thr	Glu	Leu	Lys	
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ccc	agc	agc	aaa	gca	cat	ctc	acc	aag	ctg	aaa	ata	cct	tcc	caa	cca	971
Pro	Ser	Ser	Lys	Ala	His	Leu	Thr	Lys	Leu	Lys	Ile	Pro	Ser	Gln	Pro	
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Lys	Glu	Met	Thr	His	Ser	Trp	Pro	Pro	Pro	Leu	Thr	Ala	Ile	His	Thr	
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Gln	Gln	Ser	Asn	Phe	Gly	Thr	Gly	Glu	Gln	Lys	Arg	Tyr	Asn	Pro	Ser	
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Lys	Thr	Ser	Asn	Gly	His	Gln	Ser	Lys	Ser	Met	Leu	Lys	Asp	Asp	Leu	
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Lys	Leu	Ser	Ser	Ser	Glu	Asp	Ser	Asp	Gly	Glu	Gln	Asp	Cys	Asp	Lys	
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Ser Asp Ser Glu Ala Asn Glu Pro Ser Gln Ser Ala Ser Pro Glu Pro				
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Glu Pro Pro Pro Thr Asn Lys Trp Gln Leu Asp Asn Trp Leu Asn Lys				
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 1 5 10
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 Glu Ile Gln Gln Lys Cys Gly Phe Ser Glu Leu Tyr Ser Trp Gln Arg
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Asp Ile Ala Asn Arg Phe His Met Met Asn Gly Ser Lys Ile His Phe				
62	67	72	77	
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Ser Glu Leu Gly Arg Glu Ala Gln Asn Leu Ser Ala Met Glu Ile Arg				
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Lys Lys Ala Arg Ser Phe Ala Lys Ala Ala Ile Glu Lys Gln Lys Ser				
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190	195	200	205	
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Ser Gly Asp Leu Tyr Val Leu Ala Ala Asp Lys Val Ala Ser Val Ala				
254	259	264	269	

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478 483 488 493	

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Ala Leu Val Glu Ile Leu Asp Val Ile Val Arg Ser Phe Ala Pro Ile	
750 755 760 765	
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Leu Pro His Leu Ala Glu Glu Val Phe Gln His Ile Pro Tyr Ile Lys	
766 771 776 781	
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Glu Pro Lys Ser Val Phe Arg Thr Gly Trp Ile Ser Thr Ser Ser Ile	
782 787 792 797	
tgg aaa aag ccc ggg ttg gaa gaa gct gtg aga gtg cgt gtg caa tgc	2629
Trp Lys Lys Pro Gly Leu Glu Glu Ala Val Arg Val Arg Val Gln Cys	
798 803 808 813	
gag act cat ttc ttg gaa gca tcc ctg gca aaa atg cag ctg agt aca	2677
Glu Thr His Phe Leu Glu Ala Ser Leu Ala Lys Met Gln Leu Ser Thr	
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Arg Leu Ser Leu *	
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aaagccaaga tttaggtaat gagtggatga gtaaatggtg gaggatggga gcaaaataga	3152
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Asn Ile Val Leu Ile Met Val Asp Asp Leu Gly Ile Gly Asp Leu Gly
31 36 41 46

tgc tac ggc aat gac acc atg agg acg cct cac atc gac cgc ctt gcc 251
Cys Tyr Gly Asn Asp Thr Met Arg Thr Pro His Ile Asp Arg Leu Ala
47 52 57 62

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Arg Glu Gly Val Arg Leu Thr Gln His Ile Ser Ala Ala Ser Leu Cys
63 68 73 78

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Ser Pro Ser Arg Ser Ala Phe Leu Thr Gly Arg Tyr Pro Ile Arg Ser
79 84 89 94

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Gly Met Val Ser Ser Gly Asn Arg Arg Val Ile Gln Asn Leu Ala Val
95 100 105 110

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Pro Ala Gly Leu Pro Leu Asn Glu Thr Thr Leu Ala Ala Leu Leu Lys
111 116 121 126

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Lys Gln Gly Tyr Ser Thr Gly Leu Ile Gly Lys Trp His Gln Gly Leu
127 132 137 142

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Asn Cys Asp Ser Arg Ser Asp Gln Cys His His Pro Tyr Asn Tyr Gly
143 148 153 158

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Phe Asp Tyr Tyr Tyr Gly Met Pro Phe Thr Leu Val Asp Ser Cys Trp
159 164 169 174

ccg gac ccc tct cgt aac acg gaa tta gcc ttt gag agt cag ctc tgg 635
Pro Asp Pro Ser Arg Asn Thr Glu Leu Ala Phe Glu Ser Gln Leu Trp
175 180 185 190

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Leu Cys Val Gln Leu Val Ala Ile Ala Ile Leu Thr Leu Thr Phe Gly
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Ile Leu Phe Ile Phe Leu Leu Gly Tyr Ala Trp Phe Ser Ser His Thr	
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Ser Pro Leu Tyr Trp Asp Cys Leu Leu Met Arg Gly His Glu Ile Thr	
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Glu Gln Pro Met Lys Ala Glu Arg Ala Gly Ser Ile Met Val Lys Glu	
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Ala Ile Ser Phe Leu Glu Arg His Ser Lys Glu Thr Phe Leu Leu Phe	
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Phe Ser Phe Leu His Val His Thr Pro Leu Pro Thr Thr Asp Asp Phe	
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319 324 329 334	
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Lys Gly Gly Lys Gly Met Gly Gly Trp Glu Gly Gly Ile Arg Val Pro	
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Gly Ile Val Arg Trp Pro Gly Lys Val Pro Ala Gly Arg Leu Ile Lys	
383 388 393 398	
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Glu Pro Thr Ser Leu Met Asp Ile Leu Pro Thr Val Ala Ser Val Ser	
399 404 409 414	
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Gly Gly Ser Leu Pro Gln Asp Arg Val Ile Asp Gly Arg Asp Leu Met	
415 420 425 430	
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Pro Leu Leu Gln Gly Asn Val Arg His Ser Glu His Glu Phe Leu Phe	
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His Tyr Cys Gly Ser Tyr Leu His Ala Val Arg Trp Ile Pro Lys Asp	
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Asp Ser Gly Ser Val Trp Lys Ala His Tyr Val Thr Pro Val Phe Gln	
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Pro Pro Ala Ser Gly Gly Cys Tyr Val Thr Ser Leu Cys Arg Cys Phe	
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Gly Glu Gln Val Thr Tyr His Asn Pro Pro Leu Leu Phe Asp Leu Ser	
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Arg Asp Pro Ser Glu Ser Thr Pro Leu Thr Pro Ala Thr Glu Pro Leu	
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Tyr Asp Phe Val Ile Lys Lys Val Ala Asn Ala Leu Lys Glu His Gln	
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gaa acc atc gtg cct gtg acc tac caa ctc tca gaa ctg aat cag ggc	1739
Glu Thr Ile Val Pro Val Thr Tyr Gln Leu Ser Glu Leu Asn Gln Gly	
543 548 553 558	
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Arg Thr Trp Leu Lys Pro Cys Cys Gly Val Phe Pro Phe Cys Leu Cys	
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Asp Lys Glu Glu Glu Val Ser Gln Pro Arg Gly Pro Asn Glu Lys Arg	
575 580 585 590	
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gac	gac	cag	ctg	ctg	cag	aag	ctc	agg	gcc	agt	cgc	cgc	cgc	ttc	cag	98
Asp	Asp	Gln	Leu	Leu	Gln	Lys	Leu	Arg	Ala	Ser	Arg	Arg	Arg	Phe	Gln	
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agg	cgc	atg	cag	cgg	ctg	ata	gag	aag	tac	aac	cag	ccc	ttc	gag	gac	146
Arg	Arg	Met	Gln	Arg	Leu	Ile	Glu	Lys	Tyr	Asn	Gln	Pro	Phe	Glu	Asp	
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Thr	Pro	Val	Val	Gln	Met	Ala	Thr	Leu	Thr	Tyr	Glu	Thr	Pro	Gln	Gly	
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Leu	Arg	Ile	Trp	Gly	Gly	Arg	Leu	Ile	Lys	Glu	Arg	Asn	Glu	Gly	Glu	
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atc	cag	gac	tcc	tcc	atg	aag	ccc	gcg	gac	agg	aca	gat	ggc	tcc	gtg	290
Ile	Gln	Asp	Ser	Ser	Met	Lys	Pro	Ala	Asp	Arg	Thr	Asp	Gly	Ser	Val	
79					84					89					94	
caa	gct	gca	gcc	tgg	ggt	cct	gag	ctt	ccc	tgc	cac	cgc	aca	gtc	ctg	338
Gln	Ala	Ala	Ala	Trp	Gly	Pro	Glu	Leu	Pro	Ser	His	Arg	Thr	Val	Leu	
95					100					105					110	
gga	gcc	gat	tca	aaa	agc	ggt	gag	gtc	gat	gcc	acg	tca	gac	cag	gaa	386
Gly	Ala	Asp	Ser	Lys	Ser	Gly	Glu	Val	Asp	Ala	Thr	Ser	Asp	Gln	Glu	
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Glu	Ser	Val	Ala	Trp	Ala	Leu	Ala	Pro	Ala	Val	Pro	Gln	Ser	Pro	Leu	
127					132					137					142	
aaa	aat	gaa	tta	aga	agg	aaa	tac	ttg	acc	caa	gtg	gat	ata	ctg	cta	482
Lys	Asn	Glu	Leu	Arg	Arg	Lys	Tyr	Leu	Thr	Gln	Val	Asp	Ile	Leu	Leu	
143					148					153					158	
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Gln	Gly	Ala	Glu	Tyr	Phe	Glu	Cys	Ala	Gly	Asn	Arg	Ala	Gly	Arg	Asp	
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gta	cgt	gtg	act	ccg	ctg	cct	tca	ctg	gcc	tca	cct	gcc	gtg	cct	gcc	578
Val	Arg	Val	Thr	Pro	Leu	Pro	Ser	Leu	Ala	Ser	Pro	Ala	Val	Pro	Ala	
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ccc	gga	tac	tgc	agt	cgt	atc	tcc	aga	aag	agt	cct	ggt	gac	cca	gcg	626
Pro	Gly	Tyr	Cys	Ser	Arg	Ile	Ser	Arg	Lys	Ser	Pro	Gly	Asp	Pro	Ala	
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aaa	cca	gct	tca	tct	ccc	aga	gaa	tgg	gat	cct	ttg	cat	cct	tcc	tcc	674
Lys	Pro	Ala	Ser	Ser	Pro	Arg	Glu	Trp	Asp	Pro	Leu	His	Pro	Ser	Ser	

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Thr Asp Met Ala Leu Val Pro Arg Asn Asp Ser Leu Ser Leu Gln Glu				
223	228	233	238	
acc agt agc agc agc ttc tta agc agc cag ccc ttt gaa gat gat gac				770
Thr Ser Ser Ser Ser Phe Leu Ser Ser Gln Pro Phe Glu Asp Asp Asp				
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Ile Cys Asn Val Thr Ile Ser Asp Leu Tyr Ala Gly Met Leu His Ser				
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Met Ser Arg Leu Leu Ser Thr Lys Pro Ser Ser Ile Ile Ser Thr Lys				
271	276	281	286	
acg ttc atc atg caa aac tgg aac tgc agg agg agg cac aga tat aag				914
Thr Phe Ile Met Gln Asn Trp Asn Cys Arg Arg Arg His Arg Tyr Lys				
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Ser Arg Met Asn Lys Thr Tyr Cys Lys Gly Ala Arg Arg Ser Gln Arg				
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Ser Ser Lys Glu Asn Phe Ile Pro Cys Ser Glu Pro Val Lys Gly Thr				
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Gly Ala Leu Arg Asp Cys Lys Asn Val Leu Asp Val Ser Cys Arg Lys				
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Thr Gly Leu Lys Leu Glu Lys Ala Phe Leu Glu Val Asn Arg Pro Gln				
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atc cat aag tta gat cca agt tgg aag gag cgc aaa gtg aca ccc tcg				1154
Ile His Lys Leu Asp Pro Ser Trp Lys Glu Arg Lys Val Thr Pro Ser				
367	372	377	382	
aag tat tct tcc ttg att tac ttc gac tcc agt gca aca tat aat ctt				1202
Lys Tyr Ser Ser Leu Ile Tyr Phe Asp Ser Ser Ala Thr Tyr Asn Leu				
383	388	393	398	
gat gag gaa aat aga ttt agg aca tta aaa tgg tta att tct cct gta				1250
Asp Glu Glu Asn Arg Phe Arg Thr Leu Lys Trp Leu Ile Ser Pro Val				
399	404	409	414	
aaa ata gtt tcc aga cca aca ata cga cag ggc cat gga gag aac cgt				1298
Lys Ile Val Ser Arg Pro Thr Ile Arg Gln Gly His Gly Glu Asn Arg				
415	420	425	430	
cag agg gag att gaa atc cga ttt gat cag ctt cat cgg gaa tat tgc				1346
Gln Arg Glu Ile Glu Ile Arg Phe Asp Gln Leu His Arg Glu Tyr Cys				
431	436	441	446	

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447 452 457 462	
gcc atg aac atg tac aga ggg ggt cct gcg agt cct ggt ggc ctt cag	1442
Ala Met Asn Met Tyr Arg Gly Gly Pro Ala Ser Pro Gly Gly Leu Gln	
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Gly Leu Glu Thr Arg Arg Leu Ser Leu Pro Ser Ser Lys Ala Lys Ala	
479 484 489 494	
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Lys Ser Leu Ser Glu Ala Phe Glu Asn Leu Gly Lys Arg Ser Leu Glu	
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Ala Gly Arg Cys Leu Pro Lys Ser Asp Ser Ser Ser Ser Leu Pro Lys	
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Thr Asn Pro Thr His Ser Ala Thr Arg Pro Gln Gln Thr Ser Asp Leu	
527 532 537 542	
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His Val Gln Gly Asn Ser Ser Gly Ile Phe Arg Lys Ser Val Ser Pro	
543 548 553 558	
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Ser Lys Thr Leu Ser Val Pro Asp Lys Glu Val Pro Gly His Gly Arg	
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Asn Arg Tyr Asp Glu Ile Lys Glu Glu Phe Asp Lys Leu His Gln Lys	
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Tyr Cys Leu Lys Ser Pro Gly Gln Met Thr Val Pro Leu Cys Ile Gly	
591 596 601 606	
gtg tct aca gat aaa gca agt atg gaa gtt cga tat caa aca gaa ggc	1874
Val Ser Thr Asp Lys Ala Ser Met Glu Val Arg Tyr Gln Thr Glu Gly	
607 612 617 622	
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Phe Leu Gly Lys Leu Asn Pro Asp Pro His Phe Gln Gly Phe Gln Lys	
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655 660 665 670	

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Pro Asn Ser Glu Glu Arg Gly Glu Asn Thr Ser Tyr Arg Met Glu Glu	
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Lys Ser Asp Phe Met Leu Glu Lys Leu Glu Thr Lys Ser Val *	
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Met Leu Gln Tyr Arg Arg Asp Thr Ala Gly Trp Lys Ile Cys Arg Glu	
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Gly Asn Gly Val Ser Val Ser Trp Arg Pro Ser Val Glu Phe Pro Gly	
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Asn Leu Tyr Arg Gly Glu Gly Ile Val Tyr Gly Thr Leu Glu Glu Val	
49 54 59 64	

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Cys Val Ser Arg Thr Ser Thr Pro Ser Ala Ala Met Lys Leu Ile Ser	
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Pro Arg Asp Phe Val Asp Leu Val Leu Val Lys Arg Tyr Glu Asp Gly	
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Thr Ile Ser Ser Asn Ala Thr His Val Glu His Pro Leu Cys Pro Pro	
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Lys Pro Gly Phe Val Arg Gly Phe Asn His Pro Cys Gly Cys Phe Cys	
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His Thr Asp Leu Ser Gly Tyr Leu Pro Gln Asn Val Val Asp Ser Phe	
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ttc ccc cgc agc atg acc cgg ttt tat gcc aac ctt cag aaa gca gtg	682
Phe Pro Arg Ser Met Thr Arg Phe Tyr Ala Asn Leu Gln Lys Ala Val	
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tctaaccatc tgacagagac tcggcctgga caccatgcga tgcactctgg caccaaggct	1036
ttatgtgcc atcactctca gagaccagct ttcctgact gtcatagaga atcatcatcg	1096
ccactgaaaa ccaggccctg ttgcctttta agcatgtacc gtcctctcag tctgtgctg	1156
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 <213> Homo sapiens

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 <222> (256)..(1329)

<220>
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 ccgaacatcg tgaagttgca caagtactgg ctggatacct ctgaggcctg cgcgagggtc 180
 atcttcatca cagagtacgt gtcatcaggc agcctcaagc aattcctcaa aaagaccaag 240
 aagaaccaca aggcc atg aac gcc cgg gcc tgg aag cgc tgg tgc acg cag 291
 Met Asn Ala Arg Ala Trp Lys Arg Trp Cys Thr Gln
 1 5 10
 atc ctg tct gcg ctc agc ttc ctg cac gcc tgc acc ccc cca atc atc 339
 Ile Leu Ser Ala Leu Ser Phe Leu His Ala Cys Thr Pro Pro Ile Ile
 13 18 23 28
 cac ggg aac ctg acc agc gac acc atc ttc att cag cac aac ggc ctc 387
 His Gly Asn Leu Thr Ser Asp Thr Ile Phe Ile Gln His Asn Gly Leu
 29 34 39 44
 atc aag atc ggc tcc gtg tgg cac cga atc ttc tcc aat gca ctt cca 435
 Ile Lys Ile Gly Ser Val Trp His Arg Ile Phe Ser Asn Ala Leu Pro
 45 50 55 60
 gat gat ctc cga agc ccc atc cgc gct gag cga gag gaa ctt cgg aac 483
 Asp Asp Leu Arg Ser Pro Ile Arg Ala Glu Arg Glu Glu Leu Arg Asn
 61 66 71 76
 ctg cac ttc ttc ccc cca gag tat gga gag gtg gcc gat ggg acc gct 531
 Leu His Phe Phe Pro Pro Glu Tyr Gly Glu Val Ala Asp Gly Thr Ala
 77 82 87 92
 gtg gac atc ttc tcc ttt ggg atg tgt gcg ctg gag atg gct gta ctg 579
 Val Asp Ile Phe Ser Phe Gly Met Cys Ala Leu Glu Met Ala Val Leu
 93 98 103 108
 gaa atc cag acc aat ggg gac acc cgg gtc aca gag gag gcc att gct 627
 Glu Ile Gln Thr Asn Gly Asp Thr Arg Val Thr Glu Glu Ala Ile Ala
 109 114 119 124

cgc gcc agg cac tcg ctg agt gac ccc aac atg cgg gag ttc atc ctt	675
Arg Ala Arg His Ser Leu Ser Asp Pro Asn Met Arg Glu Phe Ile Leu	
125 130 135 140	
tgc tgc ctg gcc cgg gac cct gcc cgc cgg ccc tct gcc cac agc ctc	723
Cys Cys Leu Ala Arg Asp Pro Ala Arg Arg Pro Ser Ala His Ser Leu	
141 146 151 156	
ctc ttc cac cgc gtg ctc ttc gag gtg cac tcg ctg aag ctc ctg gca	771
Leu Phe His Arg Val Leu Phe Glu Val His Ser Leu Lys Leu Leu Ala	
157 162 167 172	
gcc cac tgc ttc atc cag cac cag tac ctc atg cct gag aat gtg gtg	819
Ala His Cys Phe Ile Gln His Gln Tyr Leu Met Pro Glu Asn Val Val	
173 178 183 188	
gag gag aag acc aag gcc atg gac ctg cac gcg gtc ttg gcg gag ctt	867
Glu Glu Lys Thr Lys Ala Met Asp Leu His Ala Val Leu Ala Glu Leu	
189 194 199 204	
ccc cgg ccc cgc agg ccc ccg ctg cag tgg cgg tac tcg gaa gtc tcc	915
Pro Arg Pro Arg Arg Pro Pro Leu Gln Trp Arg Tyr Ser Glu Val Ser	
205 210 215 220	
ttc atg gag ctg gac aaa ttc ctg gag gat gtc agg aat gga atc tac	963
Phe Met Glu Leu Asp Lys Phe Leu Glu Asp Val Arg Asn Gly Ile Tyr	
221 226 231 236	
cca ctg atg aac ttt gca gcc act cga ccc ctg ggg ctg ccc cgt gtg	1011
Pro Leu Met Asn Phe Ala Ala Thr Arg Pro Leu Gly Leu Pro Arg Val	
237 242 247 252	
ctg gcc cca ccc ccg gag gag gtc caa aag gcc aag acc ccg acg cca	1059
Leu Ala Pro Pro Pro Glu Glu Val Gln Lys Ala Lys Thr Pro Thr Pro	
253 258 263 268	
gag ccc ttt gac tct gag acc aga aag gtc atc cag atg cag tgc aac	1107
Glu Pro Phe Asp Ser Glu Thr Arg Lys Val Ile Gln Met Gln Cys Asn	
269 274 279 284	
ctg gag aga agc gag gac aag gcg cgc tgg cat ctc act ctg ctt ctg	1155
Leu Glu Arg Ser Glu Asp Lys Ala Arg Trp His Leu Thr Leu Leu Leu	
285 290 295 300	
gtg ctg gaa gac cgg ctg cac cgg cag ctg acc tac gac ctg ctc cca	1203
Val Leu Glu Asp Arg Leu His Arg Gln Leu Thr Tyr Asp Leu Leu Pro	
301 306 311 316	
acg gac agc gcc cag gac ctc gcc tcg gag ctc gtg cac tat ggc ttc	1251
Thr Asp Ser Ala Gln Asp Leu Ala Ser Glu Leu Val His Tyr Gly Phe	
317 322 327 332	
ctc cac gag cac gac cgg atg aag ctg gcc gcc ttc ctg gag agc acc	1299
Leu His Glu His Asp Arg Met Lys Leu Ala Ala Phe Leu Glu Ser Thr	
333 338 343 348	

ttc ctc aag tac cgt ggg acc cag gcc tga c ccggagcccc agccccaggg 1350
Phe Leu Lys Tyr Arg Gly Thr Gln Ala *
349 354

gaccatgccg ggggtgctgcc cgggcaggcc atgttgggga gactccagca ccgtggggct 1410

gccctcctcc atgcgcctgg gagcaciaag gccccggtag tgaaggaacc ccccgctctcc 1470

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<212> DNA
<213> Homo sapiens

<220>
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<220>
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cggactccgg cggaatgggg ggtgtggctg ctccgccagg gtccccaggg tgggagagcg 120

gctccgcggc caccgatgcc cggaccccct ctgtcttctg ctagacatgc tcttcctctc 180

ggtagattgt tttgctgtcg tcgcgggccg gattcgtggc cttagtcacg cccctgggga 240

ggaggaagga gccggggccg ttcgatctgt gtggcctgga tagggcaggg caaaggggaa 300

ctgaccgct tcgtcccggt gctcctcct tttggggcat gttgatccgc ggctgcgctc 360

c atg ttc cag ttt cat gca ggc tct tgg gaa agc tgg tgc tgc tgc 406
Met Phe Gln Phe His Ala Gly Ser Trp Glu Ser Trp Cys Cys Cys
1 5 10

tgc ctg att ccc gcc gac aga cct tgg gac cgg ggc caa cac tgg cag 454
Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg Gly Gln His Trp Gln
16 21 26 31

ctg gag atg gcg gac acg aga tcc gtg cac gag act agg ttt gag gcg 502
Leu Glu Met Ala Asp Thr Arg Ser Val His Glu Thr Arg Phe Glu Ala
32 37 42 47

gcc gtg aag gtg atc cag agt ttg ccg aag aat ggt tca ttc cag cca 550
Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn Gly Ser Phe Gln Pro
48 53 58 63

aca aat gaa atg atg ctt aaa ttt tat agc ttc tat aag cag gca act 598

Thr	Asn	Glu	Met	Met	Leu	Lys	Phe	Tyr	Ser	Phe	Tyr	Lys	Gln	Ala	Thr		
64					69					74					79		
gaa	gga	ccc	tgt	aaa	ctt	tca	agg	cct	gga	ttt	tgg	gat	cct	att	gga	646	
Glu	Gly	Pro	Cys	Lys	Leu	Ser	Arg	Pro	Gly	Phe	Trp	Asp	Pro	Ile	Gly		
80					85					90					95		
aga	tat	aaa	tgg	gat	gct	tgg	agt	tca	ctg	ggg	gat	atg	acc	aaa	gag	694	
Arg	Tyr	Lys	Trp	Asp	Ala	Trp	Ser	Ser	Leu	Gly	Asp	Met	Thr	Lys	Glu		
96					101					106					111		
gaa	gcc	atg	att	gca	tat	gtt	gaa	gaa	atg	aaa	aag	att	att	gaa	act	742	
Glu	Ala	Met	Ile	Ala	Tyr	Val	Glu	Glu	Met	Lys	Lys	Ile	Ile	Glu	Thr		
112					117					122					127		
atg	cca	atg	act	gag	aaa	gtt	gaa	gaa	tgg	ctg	cgt	gtc	ata	ggg	cca	790	
Met	Pro	Met	Thr	Glu	Lys	Val	Glu	Glu	Leu	Leu	Arg	Val	Ile	Gly	Pro		
128					133					138					143		
ttt	tat	gaa	att	gtc	gag	gac	aaa	aag	agt	ggc	agg	agt	tct	gat	ata	838	
Phe	Tyr	Glu	Ile	Val	Glu	Asp	Lys	Lys	Ser	Gly	Arg	Ser	Ser	Asp	Ile		
144					149					154					159		
ccc	tca	gtc	cga	ctg	gag	aaa	atc	tct	aaa	tgt	tta	gaa	gat	ctt	ggg	886	
Pro	Ser	Val	Arg	Leu	Glu	Lys	Ile	Ser	Lys	Cys	Leu	Glu	Asp	Leu	Gly		
160					165					170					175		
aat	gtt	ctc	act	tct	act	ccg	aac	gcc	aaa	acc	gtt	aat	ggg	aaa	gct	934	
Asn	Val	Leu	Thr	Ser	Thr	Pro	Asn	Ala	Lys	Thr	Val	Asn	Gly	Lys	Ala		
176					181					186					191		
gaa	agc	agt	gac	agt	gga	gcc	gag	tct	gag	gaa	gaa	gag	gcc	caa	gaa	982	
Glu	Ser	Ser	Asp	Ser	Gly	Ala	Glu	Ser	Glu	Glu	Glu	Glu	Ala	Gln	Glu		
192					197					202					207		
gaa	gtg	aaa	gga	gca	gac	caa	agt	gat	aat	gat	aag	aaa	atg	atg	aag	1030	
Glu	Val	Lys	Gly	Ala	Asp	Gln	Ser	Asp	Asn	Asp	Lys	Lys	Met	Met	Lys		
208					213					218					223		
aag	tca	gca	gac	cat	aag	aat	ttg	gaa	gtc	att	gtc	act	aat	ggc	tat	1078	
Lys	Ser	Ala	Asp	His	Lys	Asn	Leu	Glu	Val	Ile	Val	Thr	Asn	Gly	Tyr		
224					229					234					239		
gat	aaa	gat	ggc	ttt	gtt	cag	gat	ata	cag	aat	gac	att	cat	gcc	agt	1126	
Asp	Lys	Asp	Gly	Phe	Val	Gln	Asp	Ile	Gln	Asn	Asp	Ile	His	Ala	Ser		
240					245					250					255		
tct	tcc	ctg	aat	ggc	aga	agc	act	gaa	gaa	gta	aag	ccc	att	gat	gaa	1174	
Ser	Ser	Leu	Asn	Gly	Arg	Ser	Thr	Glu	Glu	Val	Lys	Pro	Ile	Asp	Glu		
256					261					266					271		
aac	ttg	ggg	caa	act	gga	aaa	tct	gct	gtt	tgc	att	cac	caa	gat	ata	1222	
Asn	Leu	Gly	Gln	Thr	Gly	Lys	Ser	Ala	Val	Cys	Ile	His	Gln	Asp	Ile		
272					277					282					287		
aat	gat	gat	cat	gtt	gaa	gat	gtt	aca	gga	att	cag	cat	ttg	aca	agc	1270	
Asn	Asp	Asp	His	Val	Glu	Asp	Val	Thr	Gly	Ile	Gln	His	Leu	Thr	Ser		

288	293	298	303	
gat tca gac agt gaa gtt tac tgt gat tct atg gaa caa ttt gga caa	gtt tac tgt gat tct atg gaa caa ttt gga caa	gtt tac tgt gat tct atg gaa caa ttt gga caa	gtt tac tgt gat tct atg gaa caa ttt gga caa	1318
Asp Ser Asp Ser Glu Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln	Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln	Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln	Val Tyr Cys Asp Ser Met Glu Gln Phe Gly Gln	
304	309	314	319	
gaa gag tct tta gac agc ttt acg tcc aac aat gga cca ttt cag tat	gag tct tta gac agc ttt acg tcc aac aat gga cca ttt cag tat	gag tct tta gac agc ttt acg tcc aac aat gga cca ttt cag tat	gag tct tta gac agc ttt acg tcc aac aat gga cca ttt cag tat	1366
Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr	Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr	Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr	Glu Glu Ser Leu Asp Ser Phe Thr Ser Asn Asn Gly Pro Phe Gln Tyr	
320	325	330	335	
tac ttg ggt ggt cat tcc agt caa ccc atg gaa aat tct gga ttt cgt	ttg ggt ggt cat tcc agt caa ccc atg gaa aat tct gga ttt cgt	ttg ggt ggt cat tcc agt caa ccc atg gaa aat tct gga ttt cgt	ttg ggt ggt cat tcc agt caa ccc atg gaa aat tct gga ttt cgt	1414
Tyr Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg	Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg	Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg	Leu Gly Gly His Ser Ser Gln Pro Met Glu Asn Ser Gly Phe Arg	
336	341	346	351	
gaa gat att caa gta cct cct gga aat ggc aac att ggg aat atg cag	gat att caa gta cct cct gga aat ggc aac att ggg aat atg cag	gat att caa gta cct cct gga aat ggc aac att ggg aat atg cag	gat att caa gta cct cct gga aat ggc aac att ggg aat atg cag	1462
Glu Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln	Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln	Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln	Asp Ile Gln Val Pro Pro Gly Asn Gly Asn Ile Gly Asn Met Gln	
352	357	362	367	
gtg gtt gca gtt gaa gga aaa ggt gaa gtc aag cat gga gga gaa gat	gtt gca gtt gaa gga aaa ggt gaa gtc aag cat gga gga gaa gat	gtt gca gtt gaa gga aaa ggt gaa gtc aag cat gga gga gaa gat	gtt gca gtt gaa gga aaa ggt gaa gtc aag cat gga gga gaa gat	1510
Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp	Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp	Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp	Val Val Ala Val Glu Gly Lys Gly Glu Val Lys His Gly Gly Glu Asp	
368	373	378	383	
ggc agg aat aac agc gga gca cca cac cgg gag aag cga ggc gga gaa	agg aat aac agc gga gca cca cac cgg gag aag cga ggc gga gaa	agg aat aac agc gga gca cca cac cgg gag aag cga ggc gga gaa	agg aat aac agc gga gca cca cac cgg gag aag cga ggc gga gaa	1558
Gly Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu	Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu	Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu	Arg Asn Asn Ser Gly Ala Pro His Arg Glu Lys Arg Gly Gly Glu	
384	389	394	399	
act gac gaa ttc tct aat gtt aga aga gga aga gga cat agg atg caa	gac gaa ttc tct aat gtt aga aga gga aga gga cat agg atg caa	gac gaa ttc tct aat gtt aga aga gga aga gga cat agg atg caa	gac gaa ttc tct aat gtt aga aga gga aga gga cat agg atg caa	1606
Thr Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln	Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln	Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln	Asp Glu Phe Ser Asn Val Arg Arg Gly Arg Gly His Arg Met Gln	
400	405	410	415	
cac ttg agc gaa gga acc aag ggc cgg cag gtg gga agt gga ggt gat	ttg agc gaa gga acc aag ggc cgg cag gtg gga agt gga ggt gat	ttg agc gaa gga acc aag ggc cgg cag gtg gga agt gga ggt gat	ttg agc gaa gga acc aag ggc cgg cag gtg gga agt gga ggt gat	1654
His Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp	Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp	Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp	Leu Ser Glu Gly Thr Lys Gly Arg Gln Val Gly Ser Gly Gly Asp	
416	421	426	431	
ggg gag cgc tgg ggc tcc gac aga ggg tcc cga ggc agc ctc aat gag	gag cgc tgg ggc tcc gac aga ggg tcc cga ggc agc ctc aat gag	gag cgc tgg ggc tcc gac aga ggg tcc cga ggc agc ctc aat gag	gag cgc tgg ggc tcc gac aga ggg tcc cga ggc agc ctc aat gag	1702
Gly Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu	Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu	Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu	Glu Arg Trp Gly Ser Asp Arg Gly Ser Arg Gly Ser Leu Asn Glu	
432	437	442	447	
cag atc gcc ctc gtg ctg atg aga ctg cag gag gac atg cag aat gtc	atc gcc ctc gtg ctg atg aga ctg cag gag gac atg cag aat gtc	atc gcc ctc gtg ctg atg aga ctg cag gag gac atg cag aat gtc	atc gcc ctc gtg ctg atg aga ctg cag gag gac atg cag aat gtc	1750
Gln Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val	Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val	Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val	Ile Ala Leu Val Leu Met Arg Leu Gln Glu Asp Met Gln Asn Val	
448	453	458	463	
ctt cag aga ctg cag aaa ctg gaa acg ctg act gct ttg cag gca aaa	cag aga ctg cag aaa ctg gaa acg ctg act gct ttg cag gca aaa	cag aga ctg cag aaa ctg gaa acg ctg act gct ttg cag gca aaa	cag aga ctg cag aaa ctg gaa acg ctg act gct ttg cag gca aaa	1798
Leu Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys	Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys	Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys	Gln Arg Leu Gln Lys Leu Glu Thr Leu Thr Ala Leu Gln Ala Lys	
464	469	474	479	
tca tca aca tca aca ttg cag act gct cct cag ccc acc tca cag aga	tca aca ttg cag act gct cct cag ccc acc tca cag aga	tca aca ttg cag act gct cct cag ccc acc tca cag aga	tca aca ttg cag act gct cct cag ccc acc tca cag aga	1846
Ser Ser Thr Ser Thr Leu Gln Thr Ala Pro Gln Pro Thr Ser Gln Arg	aca ttg cag act gct cct cag ccc acc tca cag aga	aca ttg cag act gct cct cag ccc acc tca cag aga	aca ttg cag act gct cct cag ccc acc tca cag aga	
480	485	490	495	
cca tct tgg tgg ccc ttc gag atg tct cct ggt gtg cta acg ttt gcc	tct tgg tgg ccc ttc gag atg tct cct ggt gtg cta acg ttt gcc	tct tgg tgg ccc ttc gag atg tct cct ggt gtg cta acg ttt gcc	tct tgg tgg ccc ttc gag atg tct cct ggt gtg cta acg ttt gcc	1894
Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala	Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala	Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala	Pro Ser Trp Trp Pro Phe Glu Met Ser Pro Gly Val Leu Thr Phe Ala	
496	501	506	511	
atc ata tgg cct ttt att gca cag tgg ttg gtg tat tta tac tat caa	ata tgg cct ttt att gca cag tgg ttg gtg tat tta tac tat caa	ata tgg cct ttt att gca cag tgg ttg gtg tat tta tac tat caa	ata tgg cct ttt att gca cag tgg ttg gtg tat tta tac tat caa	1942
Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr Gln	Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr Gln	Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr Gln	Ile Ile Trp Pro Phe Ile Ala Gln Trp Leu Val Tyr Leu Tyr Tyr Gln	
512	517	522	527	

aga agg aga aga aaa ctg aac tga ggaaaatggg gttttcctca agaagactac 1996
 Arg Arg Arg Arg Lys Leu Asn *
 528 533

tggaactgga tgacctcaga atgaactgga ttgtggtgtt cacaagaaaa tcttagtttg 2056

tgatgattac attgcttttt gttgtccagt agtttagttt gtgtacatat atacacatat 2116

atattttgca ctacacaaac gataacattt taaggactaa tattgctgat acttgaataa 2176

tcaatctcta ctagggtata agtagtatac acagatttac cctgcccttg aacttgaagg 2236

acattaaatt attaatgatac atttggtaac atgtttacct gattatcttc catagagtaa 2296

cataagctgc ttttcaaagg taccgttgtg ataatgagat caagtttata agttattcgt 2356

tttaattttt taaactaaat aaaagaaaga atgcaaacca ggagtgactt tcaaagaga 2416

cgtaataggg ctttatatgt tagtctcgaa gttgccatgg catgtattgc ggctcgtcta 2476

gaggatcaca tnnacnnacg cgtgcatgcy acgt 2510

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cgccccaggc gcgcgcgcgc cggccccgcg gctctgaggt tgctcgcgcg cccccgcga 180

tcgcc atg gat cgg atg aag aag atc aaa cgg cag ctg tca atg aca 227
 Met Asp Arg Met Lys Lys Ile Lys Arg Gln Leu Ser Met Thr
 1 5 10

ctc cga ggt ggc cga ggc ata gac aag acc aat ggt gcc cct gag cag 275
 Leu Arg Gly Gly Arg Gly Ile Asp Lys Thr Asn Gly Ala Pro Glu Gln
 15 20 25 30

ata ggc ctg gat gag agt ggt ggt ggt ggc ggc agt gac cct gga gag 323
 Ile Gly Leu Asp Glu Ser Gly Gly Gly Gly Gly Ser Asp Pro Gly Glu
 31 36 41 46

gcc ccc aca cgt gct gct cct ggg gaa ctt cgt tct gca cgg ggc cca 371
 Ala Pro Thr Arg Ala Ala Pro Gly Glu Leu Arg Ser Ala Arg Gly Pro
 47 52 57 62

ctc agc tct gca cca gag att gtg cac gag gac ttg aag atg ggg tct	419
Leu Ser Ser Ala Pro Glu Ile Val His Glu Asp Leu Lys Met Gly Ser	
63 68 73 78	
gat ggg gag agt gac cag gct tca gcc acg tcc tcg gat gag gtg cag	467
Asp Gly Glu Ser Asp Gln Ala Ser Ala Thr Ser Ser Asp Glu Val Gln	
79 84 89 94	
tct cca gtg aga gtg cgt atg cgc aac cat ccc cca cgc aag atc tcc	515
Ser Pro Val Arg Val Arg Met Arg Asn His Pro Pro Arg Lys Ile Ser	
95 100 105 110	
act gag gac atc aac aag cgc cta tca cta cca gct gac atc cgg ctg	563
Thr Glu Asp Ile Asn Lys Arg Leu Ser Leu Pro Ala Asp Ile Arg Leu	
111 116 121 126	
cct gag ggc tac ctg gag aag ctg acc ctc aat agc ccc atc ttt gac	611
Pro Glu Gly Tyr Leu Glu Lys Leu Thr Leu Asn Ser Pro Ile Phe Asp	
127 132 137 142	
aag ccc ctc agc cgc cgc ctc cgt cgt gtc agc cta tct gag att ggc	659
Lys Pro Leu Ser Arg Arg Leu Arg Arg Val Ser Leu Ser Glu Ile Gly	
143 148 153 158	
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Val Ala Leu Lys Glu Ile Arg Leu Glu His Glu Glu Gly Ala Pro Cys	
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Ile Val Thr Leu His Asp Ile Ile His Thr Glu Lys Ser Leu Thr Leu	
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Leu Lys Pro Gln Asn Leu Leu Ile Asn Glu Arg Gly Glu Leu Lys Leu	
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Gly Arg Asn Arg Ile Ser Ala Glu Asp Ala Met Lys His Pro Phe Phe	
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 Glu Arg Leu Val Ser Glu Leu Ser Gly Gly Thr Gly Gly Asp Glu Glu
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 Glu Glu Trp Leu Tyr Gly Asp Glu Asn Glu Val Glu Arg Pro Glu Glu
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 Glu Asn Ala Ser Ala Asn Pro Pro Ser Gly Ile Glu Asp Glu Thr Ala
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808	813	818	823	
caa caa agc aac tgt tat ata agt cct ctc tgc cag ggc tca cca gat	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	2907	
Gln Gln Ser Asn Cys Tyr Ile Ser Pro Leu Cys Gln Gly Ser Pro Asp	Cys Pro Gly Leu Cys Phe Gly Asn Gly Arg Cys	Gly Asn Gly Arg Cys		
824	829	834	839	
cct ctt gac ctc att cag caa agc caa act ctc ttc tct cag cac act	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	2955	
Pro Leu Asp Leu Ile Gln Gln Ser Gln Thr Leu Phe Ser Gln His Thr	Gly Trp His Cys Val Cys Gln Val Gly Trp Ser	Gln Val Gly Trp Ser		
840	845	850	855	
tca aga ctt ttt tat gat cga atc aaa ttc ctc att ggc aag gac agt	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3003	
Ser Arg Leu Phe Tyr Asp Arg Ile Lys Phe Leu Ile Gly Lys Asp Ser	Cys Pro Gly Leu Cys Phe Gly Asn Gly Arg Cys	Gly Asn Gly Arg Cys		
856	861	866	871	
act cat gtc att cct cct gag gtg tca ttt gac agc agg cgt gcc tgt	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3051	
Thr His Val Ile Pro Pro Glu Val Ser Phe Asp Ser Arg Arg Ala Cys	Gly Trp His Cys Val Cys Gln Val Gly Trp Ser	Gln Val Gly Trp Ser		
872	877	882	887	
gtg att cga ggc caa gtg gtg gcc ata gat gga act cct cta gtg gga	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3099	
Val Ile Arg Gly Gln Val Val Ala Ile Asp Gly Thr Pro Leu Val Gly	Cys Pro Gly Leu Cys Phe Gly Asn Gly Arg Cys	Gly Asn Gly Arg Cys		
888	893	898	903	
gtg aat gtc agt ttc ttg cac cac agt gat tat ggg ttt acc atc agc	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3147	
Val Asn Val Ser Phe Leu His His Ser Asp Tyr Gly Phe Thr Ile Ser	Gly Trp His Cys Val Cys Gln Val Gly Trp Ser	Gln Val Gly Trp Ser		
904	909	914	919	
cgg caa gat gga agc ttt gac ctc gtg gcc atc ggt ggc atc tct gtc	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3195	
Arg Gln Asp Gly Ser Phe Asp Leu Val Ala Ile Gly Gly Ile Ser Val	Cys Pro Gly Leu Cys Phe Gly Asn Gly Arg Cys	Gly Asn Gly Arg Cys		
920	925	930	935	
atc tta atc ttc gac cga tcc cct ttc ctg cct gag aag aga aca ctc	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3243	
Ile Leu Ile Phe Asp Arg Ser Pro Phe Leu Pro Glu Lys Arg Thr Leu	Gly Trp His Cys Val Cys Gln Val Gly Trp Ser	Gln Val Gly Trp Ser		
936	941	946	951	
tgg ttg cct tgg aat cag ttt att gtg gta gag aaa gtc acc atg cag	ggc tgc cca ggg ctc tgc ttt gga aat gga cga tgt	gga aat gga cga tgt	3291	
Trp Leu Pro Trp Asn Gln Phe Ile Val Val Glu Lys Val Thr Met Gln	Cys Pro Gly Leu Cys Phe Gly Asn Gly Arg Cys	Gly Asn Gly Arg Cys		
952	957	962	967	

aga gtt gta tca gac ccg cca tcc tgc gat atc tcc aac ttt atc agc	3339
Arg Val Val Ser Asp Pro Pro Ser Cys Asp Ile Ser Asn Phe Ile Ser	
968 973 978 983	
cca aac cct att gtg ctt cct tca ccg ctc aca tca ttt gga ggg tcc	3387
Pro Asn Pro Ile Val Leu Pro Ser Pro Leu Thr Ser Phe Gly Gly Ser	
984 989 994 999	
tgt cca gag agg gga act att gtt cct gag ctg cag gtt gta cag gag	3435
Cys Pro Glu Arg Gly Thr Ile Val Pro Glu Leu Gln Val Val Gln Glu	
1000 1005 1010 1015	
gaa att ccc att ccc tcc agc ttt gtg agg ctg agt tac ctg agc agc	3483
Glu Ile Pro Ile Pro Ser Ser Phe Val Arg Leu Ser Tyr Leu Ser Ser	
1016 1021 1026 1031	
cgc acc cct ggg tat aaa acc ctg cta cgg atc ctt ctg aca cat tca	3531
Arg Thr Pro Gly Tyr Lys Thr Leu Leu Arg Ile Leu Leu Thr His Ser	
1032 1037 1042 1047	
acg att ccc gta ggc atg ata aaa gta cac ctc aca gta gct gtg gaa	3579
Thr Ile Pro Val Gly Met Ile Lys Val His Leu Thr Val Ala Val Glu	
1048 1053 1058 1063	
ggg cga ctc aca cag aag tgg ttt ccc gcc gca att aat ctt gtc tac	3627
Gly Arg Leu Thr Gln Lys Trp Phe Pro Ala Ala Ile Asn Leu Val Tyr	
1064 1069 1074 1079	
aca ttt gct tgg aac aag acc gat atc tat gga cag aag gtt tgg ggc	3675
Thr Phe Ala Trp Asn Lys Thr Asp Ile Tyr Gly Gln Lys Val Trp Gly	
1080 1085 1090 1095	
ctg gca gag gct ttg gta tct gtg gga tat gaa tat gaa acg tgc cct	3723
Leu Ala Glu Ala Leu Val Ser Val Gly Tyr Glu Tyr Glu Thr Cys Pro	
1096 1101 1106 1111	
gac ttt att ctc tgg gag caa agg aca gtc gtt tta caa ggt ttt gag	3771
Asp Phe Ile Leu Trp Glu Gln Arg Thr Val Val Leu Gln Gly Phe Glu	
1112 1117 1122 1127	
atg gat gct tct aac cta gga gac tgg tct ttg aat aag cat cac att	3819
Met Asp Ala Ser Asn Leu Gly Asp Trp Ser Leu Asn Lys His His Ile	
1128 1133 1138 1143	
ttg aat cct caa agt gga atc ata cat aaa ggg aat gga gaa aat atg	3867
Leu Asn Pro Gln Ser Gly Ile Ile His Lys Gly Asn Gly Glu Asn Met	
1144 1149 1154 1159	
ttc att tcc cag cag ccc cca gtc ata tca acc ata atg ggt aat gga	3915
Phe Ile Ser Gln Gln Pro Pro Val Ile Ser Thr Ile Met Gly Asn Gly	
1160 1165 1170 1175	
cac caa agg agt gta gcc tgc acc aac tgc aat ggc cca gcc cac aac	3963
His Gln Arg Ser Val Ala Cys Thr Asn Cys Asn Gly Pro Ala His Asn	
1176 1181 1186 1191	

aac aaa ctc ttt gct cct gtc gcc tta gct tct ggc cct gat ggc agt	4011
Asn Lys Leu Phe Ala Pro Val Ala Leu Ala Ser Gly Pro Asp Gly Ser	
1192 1197 1202 1207	
gtg tat gtt ggc gac ttc aat ttt gta agg aga ata ttt ccc tcg gga	4059
Val Tyr Val Gly Asp Phe Asn Phe Val Arg Arg Ile Phe Pro Ser Gly	
1208 1213 1218 1223	
aac tcc gtt agt att ttg gaa tta agc aca agt cct gct cac aaa tac	4107
Asn Ser Val Ser Ile Leu Glu Leu Ser Thr Ser Pro Ala His Lys Tyr	
1224 1229 1234 1239	
tat ctg gct atg gac cct gtg tct gaa tca ctc tat cta tca gac acc	4155
Tyr Leu Ala Met Asp Pro Val Ser Glu Ser Leu Tyr Leu Ser Asp Thr	
1240 1245 1250 1255	
aat act cgc aaa gtc tac aag ttg aaa tct ctt gtg gag acg aaa gat	4203
Asn Thr Arg Lys Val Tyr Lys Leu Lys Ser Leu Val Glu Thr Lys Asp	
1256 1261 1266 1271	
ctg tcc aag aat ttt gaa gtg gtg gca gga act ggt gat cag tgc ctt	4251
Leu Ser Lys Asn Phe Glu Val Val Ala Gly Thr Gly Asp Gln Cys Leu	
1272 1277 1282 1287	
ccc ttt gac cag agt cat tgt gga gat ggt ggg aga gca tcg gaa gct	4299
Pro Phe Asp Gln Ser His Cys Gly Asp Gly Gly Arg Ala Ser Glu Ala	
1288 1293 1298 1303	
tca ctg aat agc cct cga ggc atc aca gtt gat agg cat gga ttt att	4347
Ser Leu Asn Ser Pro Arg Gly Ile Thr Val Asp Arg His Gly Phe Ile	
1304 1309 1314 1319	
tac ttt gtg gat ggg act atg att cgc aaa att gat gag aat gct gtg	4395
Tyr Phe Val Asp Gly Thr Met Ile Arg Lys Ile Asp Glu Asn Ala Val	
1320 1325 1330 1335	
atc aca act gta atc ggc tca aat ggt ctg act tcc aca caa cca ctg	4443
Ile Thr Thr Val Ile Gly Ser Asn Gly Leu Thr Ser Thr Gln Pro Leu	
1336 1341 1346 1351	
agc tgt gac tca gga atg gac atc act cag gtg cga tta gag tgg cca	4491
Ser Cys Asp Ser Gly Met Asp Ile Thr Gln Val Arg Leu Glu Trp Pro	
1352 1357 1362 1367	
aca gac ctt gca gta aat cct atg gac aat tca ttg tat gtc ttg gat	4539
Thr Asp Leu Ala Val Asn Pro Met Asp Asn Ser Leu Tyr Val Leu Asp	
1368 1373 1378 1383	
aac aac att gtg ctg caa att tct gag aac agg cgt gtt cgg atc atc	4587
Asn Asn Ile Val Leu Gln Ile Ser Glu Asn Arg Arg Val Arg Ile Ile	
1384 1389 1394 1399	
gca gga cgc ccc att cac tgc cag gtg cca ggc atc gat cat ttc ctg	4635
Ala Gly Arg Pro Ile His Cys Gln Val Pro Gly Ile Asp His Phe Leu	
1400 1405 1410 1415	
gtc agc aag gta gca att cac tcc act cta gag tca gcg agg gcc atc	4683

Val Ser Lys Val Ala Ile His Ser Thr Leu Glu Ser Ala Arg Ala Ile	
1416 1421 1426 1431	
agt gtc tcc cac agc ggg ctg ctc ttc ata gct gaa aca gac gag agg	4731
Ser Val Ser His Ser Gly Leu Leu Phe Ile Ala Glu Thr Asp Glu Arg	
1432 1437 1442 1447	
aaa gta aac cgc att cag caa gta acc acc aat ggg gag atc tac atc	4779
Lys Val Asn Arg Ile Gln Gln Val Thr Thr Asn Gly Glu Ile Tyr Ile	
1448 1453 1458 1463	
atc gct ggt gcc ccc act gac tgt gac tgc aaa att gat cca aac tgt	4827
Ile Ala Gly Ala Pro Thr Asp Cys Asp Cys Lys Ile Asp Pro Asn Cys	
1464 1469 1474 1479	
gac tgt ttt tca ggt gat ggt ggc tat gcc aaa gat gca aag atg aaa	4875
Asp Cys Phe Ser Gly Asp Gly Gly Tyr Ala Lys Asp Ala Lys Met Lys	
1480 1485 1490 1495	
gcc cct tcc tcc tta gca gtg tgc cct gat gga acc ctc tat gtg gca	4923
Ala Pro Ser Ser Leu Ala Val Ser Pro Asp Gly Thr Leu Tyr Val Ala	
1496 1501 1506 1511	
gac ctc gga aat gtt cga att cgt acc atc agc agg aac caa gcc cac	4971
Asp Leu Gly Asn Val Arg Ile Arg Thr Ile Ser Arg Asn Gln Ala His	
1512 1517 1522 1527	
ctg aat gac atg aac att tat gag att gct tca ccc gct gat cag gaa	5019
Leu Asn Asp Met Asn Ile Tyr Glu Ile Ala Ser Pro Ala Asp Gln Glu	
1528 1533 1538 1543	
ctg tac cag ttc act gta aat gga acc cac cta cac acc ctg aac ttg	5067
Leu Tyr Gln Phe Thr Val Asn Gly Thr His Leu His Thr Leu Asn Leu	
1544 1549 1554 1559	
ata aca agg gac tat gtt tat aac ttc acc tac aat tct gaa ggt gac	5115
Ile Thr Arg Asp Tyr Val Tyr Asn Phe Thr Tyr Asn Ser Glu Gly Asp	
1560 1565 1570 1575	
ttg ggc gcg att acc agc agc aat ggc aat tca gtg cac att cgc cgt	5163
Leu Gly Ala Ile Thr Ser Ser Asn Gly Asn Ser Val His Ile Arg Arg	
1576 1581 1586 1591	
gat gca ggc gga atg ccg cta tgg ctt gtg gtg cct ggc gga caa gta	5211
Asp Ala Gly Gly Met Pro Leu Trp Leu Val Val Pro Gly Gly Gln Val	
1592 1597 1602 1607	
tac tgg ctg act ata agc agc aat gga gtc ctg aaa aga gtg tca gcc	5259
Tyr Trp Leu Thr Ile Ser Ser Asn Gly Val Leu Lys Arg Val Ser Ala	
1608 1613 1618 1623	
caa ggc tat aat ccg gcc tta atg acc tat cca gga aac aca ggg ctt	5307
Gln Gly Tyr Asn Pro Ala Leu Met Thr Tyr Pro Gly Asn Thr Gly Leu	
1624 1629 1634 1639	
ctg gct acc aaa agt aac gaa aat gga tgg aca acc gtt tat gag tat	5355
Leu Ala Thr Lys Ser Asn Glu Asn Gly Trp Thr Thr Val Tyr Glu Tyr	

1640	1645	1650	1655	
gac ccc gag gga cac ctg acc aat gca acg ttt ccc act gga gag gtc				5403
Asp Pro Glu Gly His Leu Thr Asn Ala Thr Phe Pro Thr Gly Glu Val				
1656	1661	1666	1671	
agc agc ttc cac agt gac ctg gag aag ctg aca aaa gtg gag cta gat				5451
Ser Ser Phe His Ser Asp Leu Glu Lys Leu Thr Lys Val Glu Leu Asp				
1672	1677	1682	1687	
act tcc aac cgt gaa aat gtc ctc atg tca acc aac ttg acg gca act				5499
Thr Ser Asn Arg Glu Asn Val Leu Met Ser Thr Asn Leu Thr Ala Thr				
1688	1693	1698	1703	
agt acc ata tat att tta aaa caa gaa aat act caa agt acc tat cgg				5547
Ser Thr Ile Tyr Ile Leu Lys Gln Glu Asn Thr Gln Ser Thr Tyr Arg				
1704	1709	1714	1719	
gtg aat cca gat ggt tcc ctg cgt gtc act ttt gcc agc ggg atg gag				5595
Val Asn Pro Asp Gly Ser Leu Arg Val Thr Phe Ala Ser Gly Met Glu				
1720	1725	1730	1735	
atc ggc ctc agc tca gag ccc cac atc ctg gca ggg gca gtc aac cct				5643
Ile Gly Leu Ser Ser Glu Pro His Ile Leu Ala Gly Ala Val Asn Pro				
1736	1741	1746	1751	
acc ctg ggc aaa tgc aac atc tca ttg ccc gga gag cac aat gca aac				5691
Thr Leu Gly Lys Cys Asn Ile Ser Leu Pro Gly Glu His Asn Ala Asn				
1752	1757	1762	1767	
ctc atc gag tgg cgg cag agg aag gag caa aac aaa ggc aat gtt tcg				5739
Leu Ile Glu Trp Arg Gln Arg Lys Glu Gln Asn Lys Gly Asn Val Ser				
1768	1773	1778	1783	
gct ttt gaa agg agg ctg agg gcc cac aac aga aac cta ctc tcc ata				5787
Ala Phe Glu Arg Arg Leu Arg Ala His Asn Arg Asn Leu Leu Ser Ile				
1784	1789	1794	1799	
gat ttt gat cat ata acc cgc aca gga aag atc tat gat gac cat cga				5835
Asp Phe Asp His Ile Thr Arg Thr Gly Lys Ile Tyr Asp Asp His Arg				
1800	1805	1810	1815	
aaa ttc acc ctt cga att ctt tat gac cag act ggg cga ccc att ctg				5883
Lys Phe Thr Leu Arg Ile Leu Tyr Asp Gln Thr Gly Arg Pro Ile Leu				
1816	1821	1826	1831	
tgg tct cct gta agc aga tat aat gaa gtg aac atc aca tat tca cct				5931
Trp Ser Pro Val Ser Arg Tyr Asn Glu Val Asn Ile Thr Tyr Ser Pro				
1832	1837	1842	1847	
tcg gga ttg gtg acg ttt att caa aga gga acg tgg aat gaa aaa atg				5979
Ser Gly Leu Val Thr Phe Ile Gln Arg Gly Thr Trp Asn Glu Lys Met				
1848	1853	1858	1863	
gaa tat gac cag agt ggg aaa att att tca aga act tgg gct gat ggg				6027
Glu Tyr Asp Gln Ser Gly Lys Ile Ile Ser Arg Thr Trp Ala Asp Gly				
1864	1869	1874	1879	

aaa att tgg agc tat acc tac tta gaa aaa tct gtg atg ctt ctc cta	6075
Lys Ile Trp Ser Tyr Thr Tyr Leu Glu Lys Ser Val Met Leu Leu Leu	
1880 1885 1890 1895	
cac agc cag cgg cgt tac atc ttt gag tat gac caa tca gat tgc ctg	6123
His Ser Gln Arg Arg Tyr Ile Phe Glu Tyr Asp Gln Ser Asp Cys Leu	
1896 1901 1906 1911	
ctg tca gtt acc atg cct agc atg gtg cgc cac agc tta caa acc atg	6171
Leu Ser Val Thr Met Pro Ser Met Val Arg His Ser Leu Gln Thr Met	
1912 1917 1922 1927	
ctt tca gtg ggc tac tac cgt aat atc tac acc cca ccg gac agt agc	6219
Leu Ser Val Gly Tyr Tyr Arg Asn Ile Tyr Thr Pro Pro Asp Ser Ser	
1928 1933 1938 1943	
act tct ttt atc caa gac tat agt cga gat ggc cga ttg cta cag acc	6267
Thr Ser Phe Ile Gln Asp Tyr Ser Arg Asp Gly Arg Leu Leu Gln Thr	
1944 1949 1954 1959	
ctg cat ctg ggg aca ggg cgc aga gtc tta tac aag tac acc aag caa	6315
Leu His Leu Gly Thr Gly Arg Arg Val Leu Tyr Lys Tyr Thr Lys Gln	
1960 1965 1970 1975	
gca agg ctt tct gag gtt ctc tat gat acc act cag gtc aca tta aca	6363
Ala Arg Leu Ser Glu Val Leu Tyr Asp Thr Thr Gln Val Thr Leu Thr	
1976 1981 1986 1991	
tat gaa gag tct tct gga gtg att aag aca ata cac ctg atg cat gac	6411
Tyr Glu Glu Ser Ser Gly Val Ile Lys Thr Ile His Leu Met His Asp	
1992 1997 2002 2007	
gga ttc atc tgc aca atc aga tac agg caa aca gga cct ctt att gga	6459
Gly Phe Ile Cys Thr Ile Arg Tyr Arg Gln Thr Gly Pro Leu Ile Gly	
2008 2013 2018 2023	
cgc cag att ttc aga ttc agt gaa gaa ggc ctt gtg aat gca cgg ttc	6507
Arg Gln Ile Phe Arg Phe Ser Glu Glu Gly Leu Val Asn Ala Arg Phe	
2024 2029 2034 2039	
gac tac agc tac aac aat ttc cga gtc aca agc atg caa gct gta atc	6555
Asp Tyr Ser Tyr Asn Asn Phe Arg Val Thr Ser Met Gln Ala Val Ile	
2040 2045 2050 2055	
aat gaa acc cct ttg cct ata gat ctt tac cga tat gtt gat gtc tct	6603
Asn Glu Thr Pro Leu Pro Ile Asp Leu Tyr Arg Tyr Val Asp Val Ser	
2056 2061 2066 2071	
ggc aga aca gag cag ttt gga aaa ttc agt gta att aat tac gat tta	6651
Gly Arg Thr Glu Gln Phe Gly Lys Phe Ser Val Ile Asn Tyr Asp Leu	
2072 2077 2082 2087	
aat cag gtc ata act act aca gtg atg aaa cac acc aaa atc ttc agt	6699
Asn Gln Val Ile Thr Thr Thr Val Met Lys His Thr Lys Ile Phe Ser	
2088 2093 2098 2103	

gcc aat gga caa gtc att gaa gtc caa tat gaa atc cta aag gca att	6747
Ala Asn Gly Gln Val Ile Glu Val Gln Tyr Glu Ile Leu Lys Ala Ile	
2104 2109 2114 2119	
gcc tac tgg atg acc att caa tat gat aat gtg ggc cga cat ggt aat	6795
Ala Tyr Trp Met Thr Ile Gln Tyr Asp Asn Val Gly Arg His Gly Asn	
2120 2125 2130 2135	
atg tga cataagggta ggagtagatg ccaatataac aagggtacttc tatgaatacg	6851
Met *	
2136	
atgctgatgg gcaacttcag actgtttctg taaatgacaa aaccagtggt cgttatagtt	6911
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Met Gln Ser Arg Asp Thr Val Asn Val	
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aag ttt act ccc aga tcc ttc tgg ggc tgc cgt cct aaa cat act ggg	1179
Lys Phe Thr Pro Arg Ser Phe Trp Gly Ser Arg Pro Lys His Thr Gly	
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ggc aga tct gag atg agg gcc cac gtt ccc cag gcc cct tgg gca agg	1227
Gly Arg Ser Glu Met Arg Ala His Val Pro Gln Ala Pro Trp Ala Arg	
26 31 36 41	

caa gcg ccg cct gtt ctg ccc ctc tgg acc gtg gtg aat gac cat ccc	1275
Gln Ala Pro Pro Val Leu Pro Leu Trp Thr Val Val Asn Asp His Pro	
42 47 52 57	
cat gag aaa cct gtt tca aga ccc cag aat aca tag agac acacacatgg	1325
His Glu Lys Pro Val Ser Arg Pro Gln Asn Thr *	
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 Met Asn Lys Ser Leu Gly Pro Val Ser Phe Lys
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 gac gtg gct gtg gac ttc acc cag gag gaa tgg cag cag ctg gat cct 220
 Asp Val Ala Val Asp Phe Thr Gln Glu Glu Trp Gln Gln Leu Asp Pro
 12 17 22 27
 gag cag aag ata act tac agg gat gtg atg ctg gag aac tac agc aat 268
 Glu Gln Lys Ile Thr Tyr Arg Asp Val Met Leu Glu Asn Tyr Ser Asn
 28 33 38 43
 cta gtt tct gtg ggg tat cac att atc aaa ccg gat gtt atc agc aag 316
 Leu Val Ser Val Gly Tyr His Ile Ile Lys Pro Asp Val Ile Ser Lys
 44 49 54 59
 ttg gag caa gga gaa gag cca tgg ata gta gaa gga gaa ttc cta ctt 364
 Leu Glu Gln Gly Glu Glu Pro Trp Ile Val Glu Gly Glu Phe Leu Leu
 60 65 70 75
 cag agc tat cca gat gaa gtc tgg caa act gat gac cta ata gag aga 412
 Gln Ser Tyr Pro Asp Glu Val Trp Gln Thr Asp Asp Leu Ile Glu Arg
 76 81 86 91
 atc cag gaa gag gaa aat aaa cct tca agg caa act gtg ttc att gag 460
 Ile Gln Glu Glu Glu Asn Lys Pro Ser Arg Gln Thr Val Phe Ile Glu
 92 97 102 107
 acc ctg att gaa gag aga ggt aat gtt cct ggt aaa act ttt gat gta 508
 Thr Leu Ile Glu Glu Arg Gly Asn Val Pro Gly Lys Thr Phe Asp Val
 108 113 118 123
 gaa acg aac cct gtt cct tca aga aaa ata gcc tat aaa aat agc ctc 556

Glu Thr Asn Pro Val	Pro Ser Arg Lys Ile Ala Tyr Lys Asn Ser Leu	
124	129	134 139
tgt gac tca tgt gaa aag tgt tta acg tct gtt tca gaa tat att agt		604
Cys Asp Ser Cys Glu Lys Cys Leu Thr Ser Val Ser Glu Tyr Ile Ser		
140	145	150 155
agt gat gga agc tat gca aga atg aaa gct gat gaa tgt agt gga tgt		652
Ser Asp Gly Ser Tyr Ala Arg Met Lys Ala Asp Glu Cys Ser Gly Cys		
156	161	166 171
ggg aaa tca ctc ctc cat att aag ctt gag aaa act cat cca gga gat		700
Gly Lys Ser Leu Leu His Ile Lys Leu Glu Lys Thr His Pro Gly Asp		
172	177	182 187
caa gct tat gaa ttt aat caa aat ggg gaa cct tat act cta aat gaa		748
Gln Ala Tyr Glu Phe Asn Gln Asn Gly Glu Pro Tyr Thr Leu Asn Glu		
188	193	198 203
gaa agt ctt tat cag aaa att cgt att ttg gag aaa cct ttt gaa tat		796
Glu Ser Leu Tyr Gln Lys Ile Arg Ile Leu Glu Lys Pro Phe Glu Tyr		
204	209	214 219
att gaa tgc cag aaa gcc ttc caa aag gac act gtt ttt gtt aat cac		844
Ile Glu Cys Gln Lys Ala Phe Gln Lys Asp Thr Val Phe Val Asn His		
220	225	230 235
atg gaa gaa aag ccc tat aag tgg aat gga tct gaa ata gcc ttt ctc		892
Met Glu Glu Lys Pro Tyr Lys Trp Asn Gly Ser Glu Ile Ala Phe Leu		
236	241	246 251
cag atg tcg gac ctc act gta cat cag aca tct cat atg gaa atg aag		940
Gln Met Ser Asp Leu Thr Val His Gln Thr Ser His Met Glu Met Lys		
252	257	262 267
ccc tat gaa tgc agt gaa tgt ggg aaa tcc ttc tgt aaa aag tca aaa		988
Pro Tyr Glu Cys Ser Glu Cys Gly Lys Ser Phe Cys Lys Lys Ser Lys		
268	273	278 283
ttt att ata cat cag agg act cac aca gga gag aaa cct tac gaa tgt		1036
Phe Ile Ile His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys		
284	289	294 299
aat cag tgt ggg aaa tcc ttc tgc cag aag gga acc ctt act gtg cat		1084
Asn Gln Cys Gly Lys Ser Phe Cys Gln Lys Gly Thr Leu Thr Val His		
300	305	310 315
cag aga aca cac aca ggg gag aag ccc tat gaa tgt aat gaa tgt ggg		1132
Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys Gly		
316	321	326 331
aag aac ttt tac cag aag tta cac ctc att cag cat cag aga act cac		1180
Lys Asn Phe Tyr Gln Lys Leu His Leu Ile Gln His Gln Arg Thr His		
332	337	342 347
tca gga gag aag ccc tat gaa tgt agt tat tgt gga aaa tcc ttt tgc		1228
Ser Gly Glu Lys Pro Tyr Glu Cys Ser Tyr Cys Gly Lys Ser Phe Cys		

348	353	358	363	
cag aag aca cac ctc	aca caa cat cag aga	aca cat tca gga gag aga	1276	
Gln Lys Thr His Leu	Thr Gln His Gln Arg	Thr His Ser Gly Glu Arg		
364	369	374	379	
cct tat gtt tgt cat	gac tgt ggg aaa acc ttc	tcg cag aag tca gca	1324	
Pro Tyr Val Cys His	Asp Cys Gly Lys Thr	Phe Ser Gln Lys Ser Ala		
380	385	390	395	
ctt aat gac cat cag	aaa att cac aca ggt gtg	aaa ctc tac aag tgt	1372	
Leu Asn Asp His Gln	Lys Ile His Thr Gly Val	Lys Leu Tyr Lys Cys		
396	401	406	411	
agt gaa tgt ggg aaa	tgc ttc tgc cgc aag tct	act ctc acg acc cac	1420	
Ser Glu Cys Gly Lys	Cys Phe Cys Arg Lys	Ser Thr Leu Thr Thr His		
412	417	422	427	
ctg agg acc cac aca	gga gag aaa ccg tat	gaa tgt aat gag tgt gga	1468	
Leu Arg Thr His Thr	Gly Glu Lys Pro Tyr	Glu Cys Asn Glu Cys Gly		
428	433	438	443	
aaa gcc ttc tct cgg	atg tca tac ctc act	gta cat tat aga act cat	1516	
Lys Ala Phe Ser Arg	Met Ser Tyr Leu Thr	Val His Tyr Arg Thr His		
444	449	454	459	
tca gga gag aaa ccc	tat gag tgt act gaa	tgt gga aaa aaa ttc tac	1564	
Ser Gly Glu Lys Pro	Tyr Glu Cys Thr Glu	Cys Gly Lys Lys Phe Tyr		
460	465	470	475	
cac aaa tca gca ttc	aac agc cat cag aga	att cat agg aga ggc aat	1612	
His Lys Ser Ala Phe	Asn Ser His Gln Arg	Ile His Arg Arg Gly Asn		
476	481	486	491	
atg aat gta ata gat	gtg gga agg ctt ctc	tga agtcagac ctcattttat	1663	
Met Asn Val Ile Asp	Val Gly Arg Leu Leu	*		
492	497	502		
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ttgcaaggaa a atg aag ctt cct att ttc ata gca gat gca ttc aca gca 230

Met Lys Leu Pro Ile Phe Ile Ala Asp Ala Phe Thr Ala

1

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10

aga gca ttt cgt ggg aat cct gct gct gtt tgc ctc cta gaa aat gaa 278

Arg Ala Phe Arg Gly Asn Pro Ala Ala Val Cys Leu Leu Glu Asn Glu

14

19

24

29

ttg gat gaa gac atg cat cag aaa att gca agg gag atg aac ctc tct 326

Leu Asp Glu Asp Met His Gln Lys Ile Ala Arg Glu Met Asn Leu Ser

30

35

40

45

gaa act gct ttt atc cga aaa ctg cac ccg aca gac aac ttt gca caa 374

Glu Thr Ala Phe Ile Arg Lys Leu His Pro Thr Asp Asn Phe Ala Gln

46

51

56

61

agt tcc tgc ttt gga ctg aga tgg ttt aca cca gcg agt gag gtc cca 422

Ser Ser Cys Phe Gly Leu Arg Trp Phe Thr Pro Ala Ser Glu Val Pro

62

67

72

77

ctc tgt ggc cat gcc acc ctg gct tct gca gct gtg ctg ttt cac aaa 470

Leu Cys Gly His Ala Thr Leu Ala Ser Ala Ala Val Leu Phe His Lys

78

83

88

93

ata aaa aac atg aat agc acg ctc acg ttt gtc act ctg agt gga gaa 518

Ile Lys Asn Met Asn Ser Thr Leu Thr Phe Val Thr Leu Ser Gly Glu

94

99

104

109

cta agg gcc aga cga gca gag gac ggc atc gtc ctg gac ttg cct ctt 566

Leu Arg Ala Arg Arg Ala Glu Asp Gly Ile Val Leu Asp Leu Pro Leu

110

115

120

125

tat cca gcc cac ccc cag gac ttc cat gaa gta gag gac ttg ata aag 614

Tyr Pro Ala His Pro Gln Asp Phe His Glu Val Glu Asp Leu Ile Lys

126

131

136

141

act gcc ata ggc aac aca ctg gtc cag gac atc tgt tat tct cca gat 662

Thr Ala Ile Gly Asn Thr Leu Val Gln Asp Ile Cys Tyr Ser Pro Asp

142

147

152

157

acc caa aag ctc ctc gtc cgc ctc agt gac gtt tac aac agg tcg ttt 710

Thr Gln Lys Leu Leu Val Arg Leu Ser Asp Val Tyr Asn Arg Ser Phe

158

163

168

173

ctg gag aac ctg aaa gtg aac acg gag aat ctg ctg caa gtt gaa aac	758
Leu Glu Asn Leu Lys Val Asn Thr Glu Asn Leu Leu Gln Val Glu Asn	
174 179 184 189	
aca ggg aag gtg aaa ggg ctt att ctt acc ctt aaa gga gag cct ggt	806
Thr Gly Lys Val Lys Gly Leu Ile Leu Thr Leu Lys Gly Glu Pro Gly	
190 195 200 205	
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Gly Gln Thr Gln Ala Phe Asp Phe Tyr Ser Arg Tyr Phe Ala Pro Trp	
206 211 216 221	
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Val Gly Val Ala Glu Asp Pro Val Thr Gly Ser Ala His Ala Val Leu	
222 227 232 237	
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Ser Ser Tyr Trp Ser Gln His Leu Gly Lys Lys Glu Met His Ala Phe	
238 243 248 253	
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Gln Cys Ser His Arg Gly Gly Glu Leu Gly Ile Ser Leu Arg Pro Asp	
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Leu Thr Ala *	
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gcactttgag aggccaaggt ggggtgatca cctgaggtca ggggttcgac accagcctgg	1281
ccaacatggt gaaacctcgt ctctataaaa aaaaa	1316

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cccatttcag cttotttagga ctotgcactt cccagaagg aagaattaaa a atg aat      177
                                   Met Asn
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atg ttc aag gaa gca gtg acc ttc aag gac gtg gct gtg acc ttc acg      225
Met Phe Lys Glu Ala Val Thr Phe Lys Asp Val Ala Val Thr Phe Thr
  3                               8                               13                               18

gag gag gaa ttg ggg ctg ctg ggc cct gcc cag agg aag ctg tac cga      273
Glu Glu Glu Leu Gly Leu Leu Gly Pro Ala Gln Arg Lys Leu Tyr Arg
  19                               24                               29                               34

gat gtg atg gtg gag aac ttt agg aac ctg ctg tca gtg ggg cat cca      321
Asp Val Met Val Glu Asn Phe Arg Asn Leu Leu Ser Val Gly His Pro
  35                               40                               45                               50

ccc ttc aaa caa gat gta tca cct ata gaa aga aat gag cag ctt tgg      369
Pro Phe Lys Gln Asp Val Ser Pro Ile Glu Arg Asn Glu Gln Leu Trp
  51                               56                               61                               66

ata atg acg aca gca acc cga aga cag gga aat tta gat acc tta ctt      417
Ile Met Thr Thr Ala Thr Arg Arg Gln Gly Asn Leu Asp Thr Leu Leu
  67                               72                               77                               82

gta aaa gct ctt ttg ctc tat gac ctg gct caa act taa acttgattt      466
Val Lys Ala Leu Leu Leu Tyr Asp Leu Ala Gln Thr *
  83                               88                               93

gaagttagaa gaaatgttgg aagtcattta tatatgaaga aatgttggaa ggactcatat      526

atgcatacat tccttgagtg actatgaatg actgccgggc agtaacttct gggctgtggt      586

tgtaaactgt gagcactaca aaatgttttt ccttattgat accatattat ggtaggaaag      646

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<212> DNA
<213> Homo sapiens

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<220>
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<222> (160)..(714)

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ccagcagctg ctgttgccac caccactagt tcaagcacc      atg cag ttt acc tca      174
                                   Met Gln Phe Thr Ser
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ata tca aat tct ttg acc tcc act gct gct att ggg ctc tca ttt aca	222
Ile Ser Asn Ser Leu Thr Ser Thr Ala Ala Ile Gly Leu Ser Phe Thr	
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act tca acg act acc acc gcc act ttc acc acc aac act act acc aca	270
Thr Ser Thr Thr Thr Thr Ala Thr Phe Thr Thr Asn Thr Thr Thr Thr	
22 27 32 37	
atc acc agt ggc ttt act gtg aac caa aac caa ctg tta tca aga ggg	318
Ile Thr Ser Gly Phe Thr Val Asn Gln Asn Gln Leu Leu Ser Arg Gly	
38 43 48 53	
ttt gaa aac ctt gta cct tat act tca act gtt agt gta gta gca act	366
Phe Glu Asn Leu Val Pro Tyr Thr Ser Thr Val Ser Val Val Ala Thr	
54 59 64 69	
cct gtg atg aca tat ggt cat ctg gag ggt ctt ata aat gag tgg aac	414
Pro Val Met Thr Tyr Gly His Leu Glu Gly Leu Ile Asn Glu Trp Asn	
70 75 80 85	
ctt gag ctg gaa gat caa gag aag tac ttt ctt ctc cag gcc act cag	462
Leu Glu Leu Glu Asp Gln Glu Lys Tyr Phe Leu Leu Gln Ala Thr Gln	
86 91 96 101	
gtc aat gct tgg gac cat aca ttg att gag aat ggt gag atg att cgt	510
Val Asn Ala Trp Asp His Thr Leu Ile Glu Asn Gly Glu Met Ile Arg	
102 107 112 117	
att tta cat gga gaa gtg aac aaa gtg aaa ctg gat cag aaa aga ttg	558
Ile Leu His Gly Glu Val Asn Lys Val Lys Leu Asp Gln Lys Arg Leu	
118 123 128 133	
gaa caa gaa ttg gat ttt atc ctg tca cag cag cag gaa cta gaa ttt	606
Glu Gln Glu Leu Asp Phe Ile Leu Ser Gln Gln Gln Glu Leu Glu Phe	
134 139 144 149	
ctg ttg act tat tta gag gag tct acg cgc gac cag agt gga ctt cat	654
Leu Leu Thr Tyr Leu Glu Glu Ser Thr Arg Asp Gln Ser Gly Leu His	
150 155 160 165	
tat ctg cag gat gca gat gag gag cat gtg gag atc tcc acc aga tct	702
Tyr Leu Gln Asp Ala Asp Glu Glu His Val Glu Ile Ser Thr Arg Ser	
166 171 176 181	
gca gaa ttc tga atg cccatatgga ctccctgcag tggattgatc ggaattcagg	757
Ala Glu Phe *	
182	
catgctgcga aggaaggtag aagtggtaac acgggttttt cgaggattat cattcagcag	817
gggtcttttca catcatgttc atcaactgttt tttagtgtat tgaccctttt ttcagcttgt	877
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 gtttcagtac ctttgtcttt ttccaggtaa aactcttttag cctcttatca aacatgttat 240
 gccacatcta aattccatat tttatgtaat ataaggaaaa atagttttat ttgtatgatt 300
 tatacttcat gtgttaggaa cctgtgacta catgttctga actgttagta agaaaaatgg 360
 tattggatac cttactcttt aagattttta attatttttg gtaaaactgg gaaatagccg 420
 tctgatttgc attttatttt cttttgtatt ttaaggat atg gaa tat tat ctt 473
 Met Glu Tyr Tyr Leu
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 gta aaa tgg aaa gga tgg cca gat tct aca aat act tgg gaa cct ttg 521
 Val Lys Trp Lys Gly Trp Pro Asp Ser Thr Asn Thr Trp Glu Pro Leu
 6 11 16 21
 caa aat ctg aag tgc ccg tta ctg ctt cag caa ttc tct aat gac aag 569
 Gln Asn Leu Lys Cys Pro Leu Leu Leu Gln Gln Phe Ser Asn Asp Lys
 22 27 32 37
 cat aat tat tta tct cag gta aag aaa ggc aaa gca ata act cca aaa 617
 His Asn Tyr Leu Ser Gln Val Lys Lys Gly Lys Ala Ile Thr Pro Lys
 38 43 48 53
 gac aat aac aaa act ttg aaa cct gcc att gct gag tac att gtg aag 665
 Asp Asn Asn Lys Thr Leu Lys Pro Ala Ile Ala Glu Tyr Ile Val Lys
 54 59 64 69
 aag gct aaa caa agg ata gct ctg cag aga tgg caa gat gaa ctg aac 713
 Lys Ala Lys Gln Arg Ile Ala Leu Gln Arg Trp Gln Asp Glu Leu Asn
 70 75 80 85
 aga aga aag aat cat aaa gga atg ata ttt gtt gaa aat act gtt gat 761
 Arg Arg Lys Asn His Lys Gly Met Ile Phe Val Glu Asn Thr Val Asp
 86 91 96 101
 tta gag ggc cca cct tca gac ttc tat tac att aac gaa tac aaa cca 809
 Leu Glu Gly Pro Pro Ser Asp Phe Tyr Tyr Ile Asn Glu Tyr Lys Pro
 102 107 112 117

gct cct gga atc agc tta gtc aat gaa gct acc ttt ggt tgt tca tgc	857
Ala Pro Gly Ile Ser Leu Val Asn Glu Ala Thr Phe Gly Cys Ser Cys	
118 123 128 133	
aca gat tgc ttc ttt caa aaa tgt tgt cct gct gaa gct gga gtt ctt	905
Thr Asp Cys Phe Phe Gln Lys Cys Cys Pro Ala Glu Ala Gly Val Leu	
134 139 144 149	
ttg gct tat aat aaa aac caa caa att aaa atc cca cct ggt act ccc	953
Leu Ala Tyr Asn Lys Asn Gln Gln Ile Lys Ile Pro Pro Gly Thr Pro	
150 155 160 165	
atc tat gaa tgc aac tca agg tgt cag tgt ggt cct gat tgt ccc aat	1001
Ile Tyr Glu Cys Asn Ser Arg Cys Gln Cys Gly Pro Asp Cys Pro Asn	
166 171 176 181	
agg att gta caa aaa ggc aca cag tat tgc ctt tgc atc ttt cga act	1049
Arg Ile Val Gln Lys Gly Thr Gln Tyr Ser Leu Cys Ile Phe Arg Thr	
182 187 192 197	
agc aat gga cgt ggc tgg ggt gta aag acc ctt gtg aag att aaa aga	1097
Ser Asn Gly Arg Gly Trp Gly Val Lys Thr Leu Val Lys Ile Lys Arg	
198 203 208 213	
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Met Ser Phe Val Met Glu Tyr Val Gly Glu Val Ile Thr Ser Glu Glu	
214 219 224 229	
gct gaa aga cga gga cag ttc tat gac aac aag gga atc acg tat ctc	1193
Ala Glu Arg Arg Gly Gln Phe Tyr Asp Asn Lys Gly Ile Thr Tyr Leu	
230 235 240 245	
ttt gat ctg gac tat gag tct gat gaa ttc aca gtg gat gcg gct cga	1241
Phe Asp Leu Asp Tyr Glu Ser Asp Glu Phe Thr Val Asp Ala Ala Arg	
246 251 256 261	
tac ggc aat gtg tct cat ttt gtg aat cac agc tgt gac cca aat ctt	1289
Tyr Gly Asn Val Ser His Phe Val Asn His Ser Cys Asp Pro Asn Leu	
262 267 272 277	
cag gtg ttc aat gtt ttc att gat aac ctc gat act cgt ctt ccc cga	1337
Gln Val Phe Asn Val Phe Ile Asp Asn Leu Asp Thr Arg Leu Pro Arg	
278 283 288 293	
ata gca ttg ttt tcc aca aga acc ata aat gct gga gaa gag ctg act	1385
Ile Ala Leu Phe Ser Thr Arg Thr Ile Asn Ala Gly Glu Glu Leu Thr	
294 299 304 309	
ttt gat tat caa atg aaa ggt tct gga gat ata tct tca gat tct att	1433
Phe Asp Tyr Gln Met Lys Gly Ser Gly Asp Ile Ser Ser Asp Ser Ile	
310 315 320 325	
gac cac agc cca gcc aaa aag agg gtc aga aca gta tgt aaa tgt gga	1481
Asp His Ser Pro Ala Lys Lys Arg Val Arg Thr Val Cys Lys Cys Gly	
326 331 336 341	
gct gtg act tgc aga ggt tac ctc aac tga a ctttttcagg aaatagagct	1532

Ala Val Thr Cys Arg Gly Tyr Leu Asn *
342 347

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Met
1

gcg cca gcg aaa gcc acg aac gtg gtg cgg ctg cta cta ggc tcc aca 166
Ala Pro Ala Lys Ala Thr Asn Val Val Arg Leu Leu Leu Gly Ser Thr
2 7 12 17

gcg ctg tgg ctt tcg cag ctc ggc tcc ggg acg gtc gcc gcg tcc aag 214
Ala Leu Trp Leu Ser Gln Leu Gly Ser Gly Thr Val Ala Ala Ser Lys
18 23 28 33

tcg gtg act gcc cac ttg gcc gcg aag tgg ccc gag acc ccg ctg ctg 262
Ser Val Thr Ala His Leu Ala Ala Lys Trp Pro Glu Thr Pro Leu Leu
34 39 44 49

ctg gag gca agt gaa ttt atg gca gaa gaa agt aat gaa aaa ttt tgg 310
Leu Glu Ala Ser Glu Phe Met Ala Glu Glu Ser Asn Glu Lys Phe Trp
50 55 60 65

cag ttt ttg gaa act gtg caa gaa tta gca att tat aag caa aca gaa 358
Gln Phe Leu Glu Thr Val Gln Glu Leu Ala Ile Tyr Lys Gln Thr Glu
66 71 76 81

tca gat tat tct tat tac aac tta atc ctg aag aaa gct gga cag ttt 406
Ser Asp Tyr Ser Tyr Tyr Asn Leu Ile Leu Lys Lys Ala Gly Gln Phe
82 87 92 97

cta gac aat tta cac atc aac ctt tta aag ttt gct ttc tct ata agg 454
Leu Asp Asn Leu His Ile Asn Leu Leu Lys Phe Ala Phe Ser Ile Arg
98 103 108 113

gca tac tcc cca gct att cag atg ttt cag cag att gca gct gat gag 502
Ala Tyr Ser Pro Ala Ile Gln Met Phe Gln Gln Ile Ala Ala Asp Glu
114 119 124 129

cca cca cca gat ggt tgt aat gca ttt gtg gtt att cat aag aag cac	550
Pro Pro Pro Asp Gly Cys Asn Ala Phe Val Val Ile His Lys Lys His	
130 135 140 145	
acc tgt aaa att aat gag att aaa aag ctg ctg aag aaa gct gct tca	598
Thr Cys Lys Ile Asn Glu Ile Lys Lys Leu Leu Lys Lys Ala Ala Ser	
146 151 156 161	
agg act aga cct tat cta ttt aaa gga gat cac aaa ttt cct aca aac	646
Arg Thr Arg Pro Tyr Leu Phe Lys Gly Asp His Lys Phe Pro Thr Asn	
162 167 172 177	
aaa gag aac tta cca gtg gtg att ctc tat gcc gaa atg ggt act aga	694
Lys Glu Asn Leu Pro Val Val Ile Leu Tyr Ala Glu Met Gly Thr Arg	
178 183 188 193	
aca ttt agt gca ttt cac aaa gta ttg tct gaa aaa gct caa aat gag	742
Thr Phe Ser Ala Phe His Lys Val Leu Ser Glu Lys Ala Gln Asn Glu	
194 199 204 209	
gaa att ctg tat gtt ctt cgc cat tat att cag aaa cca agc tca cgg	790
Glu Ile Leu Tyr Val Leu Arg His Tyr Ile Gln Lys Pro Ser Ser Arg	
210 215 220 225	
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Lys Met Tyr Leu Ser Gly Tyr Gly Val Glu Leu Ala Ile Lys Ser Thr	
226 231 236 241	
gaa tac aaa gca ctg gat gat acc caa gtt aaa act gtg act aat act	886
Glu Tyr Lys Ala Leu Asp Asp Thr Gln Val Lys Thr Val Thr Asn Thr	
242 247 252 257	
act gta gag gat gag act gaa aca aat gaa gtt caa gga ttt ctc ttt	934
Thr Val Glu Asp Glu Thr Glu Thr Asn Glu Val Gln Gly Phe Leu Phe	
258 263 268 273	
ggg aaa cta aaa gaa ata tat tca gat ctt aga gat aat ctg aca gca	982
Gly Lys Leu Lys Glu Ile Tyr Ser Asp Leu Arg Asp Asn Leu Thr Ala	
274 279 284 289	
ttc caa aaa tac ctg att gag agt aac aaa caa atg atg cct ttg aaa	1030
Phe Gln Lys Tyr Leu Ile Glu Ser Asn Lys Gln Met Met Pro Leu Lys	
290 295 300 305	
gtc tgg gaa cta caa gat ctt agt ttt caa gca gct tct caa ata atg	1078
Val Trp Glu Leu Gln Asp Leu Ser Phe Gln Ala Ala Ser Gln Ile Met	
306 311 316 321	
tcc gct cca gtt tat gat gcc att aaa tta atg aaa gac att tca cag	1126
Ser Ala Pro Val Tyr Asp Ala Ile Lys Leu Met Lys Asp Ile Ser Gln	
322 327 332 337	
aac ttc ccc ata aaa gcc aga tct cta acc aga att gct gta aat caa	1174
Asn Phe Pro Ile Lys Ala Arg Ser Leu Thr Arg Ile Ala Val Asn Gln	
338 343 348 353	

cat atg aga gaa gaa ata aag gaa aat caa aag gat ctt caa gtt aga	1222
His Met Arg Glu Glu Ile Lys Glu Asn Gln Lys Asp Leu Gln Val Arg	
354 359 364 369	
ttt aaa att cag cca ggc gat gct cgt cta ttt ata aat ggc ctt cgt	1270
Phe Lys Ile Gln Pro Gly Asp Ala Arg Leu Phe Ile Asn Gly Leu Arg	
370 375 380 385	
gtt gat atg gat gtt tat gac gct ttt agt att ttg gat atg ctg aaa	1318
Val Asp Met Asp Val Tyr Asp Ala Phe Ser Ile Leu Asp Met Leu Lys	
386 391 396 401	
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Leu Glu Gly Lys Met Met Asn Gly Leu Arg Asn Leu Gly Ile Asn Gly	
402 407 412 417	
gaa gat atg agc aaa ttt tta aaa tta aat tca cac att tgg gaa tat	1414
Glu Asp Met Ser Lys Phe Leu Lys Leu Asn Ser His Ile Trp Glu Tyr	
418 423 428 433	
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Thr Tyr Val Leu Asp Ile Arg His Ser Ser Ile Met Trp Ile Asn Asp	
434 439 444 449	
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Leu Glu Asn Asp Asp Leu Tyr Ile Thr Trp Pro Thr Ser Cys Gln Lys	
450 455 460 465	
ctt ctg aag cca gta ttt cct gga agt gta cct tcc ata agg cgc aat	1558
Leu Leu Lys Pro Val Phe Pro Gly Ser Val Pro Ser Ile Arg Arg Asn	
466 471 476 481	
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Phe His Asn Leu Val Leu Phe Ile Asp Pro Ala Gln Glu Tyr Thr Leu	
482 487 492 497	
gat ttt ata aaa ctt gct gat gtt ttc tat tct cac gaa gtt cct ctt	1654
Asp Phe Ile Lys Leu Ala Asp Val Phe Tyr Ser His Glu Val Pro Leu	
498 503 508 513	
aga att ggt ttt gtg ttc att ctt aat aca gat gat gaa gtt gat gga	1702
Arg Ile Gly Phe Val Phe Ile Leu Asn Thr Asp Asp Glu Val Asp Gly	
514 519 524 529	
gca aat gat gct gga gtt gct ctc tgg cga gct ttc aac tat att gca	1750
Ala Asn Asp Ala Gly Val Ala Leu Trp Arg Ala Phe Asn Tyr Ile Ala	
530 535 540 545	
gaa gaa ttt gat ata tca gaa gca ttt att tct ata gta cac atg tac	1798
Glu Glu Phe Asp Ile Ser Glu Ala Phe Ile Ser Ile Val His Met Tyr	
546 551 556 561	
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Gln Lys Val Lys Lys Asp Gln Asn Ile Leu Thr Val Asp Asn Val Lys	
562 567 572 577	
agt gtt ctc caa aat aca ttt cct cat gct aat att tgg gat att ttg	1894

Ser Val Leu Gln Asn Thr Phe Pro His Ala Asn Ile Trp Asp Ile Leu	
578 583 588 593	
gga att cat tct aaa tat gat gaa gaa aga aag gct gga gca agc ttt	1942
Gly Ile His Ser Lys Tyr Asp Glu Glu Arg Lys Ala Gly Ala Ser Phe	
594 599 604 609	
tat aag atg act ggc ctg ggt cct ttg cct caa gct ctt tat aat ggt	1990
Tyr Lys Met Thr Gly Leu Gly Pro Leu Pro Gln Ala Leu Tyr Asn Gly	
610 615 620 625	
gaa ccc ttt aaa cat gaa gag atg aat att aaa gaa cta aaa atg gct	2038
Glu Pro Phe Lys His Glu Glu Met Asn Ile Lys Glu Leu Lys Met Ala	
626 631 636 641	
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Val Leu Gln Arg Met Met Asp Ala Ser Val Tyr Leu Gln Arg Glu Val	
642 647 652 657	
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Phe Leu Gly Thr Leu Asn Asp Arg Thr Asn Ala Ile Asp Phe Leu Met	
658 663 668 673	
gat agg aat aat gtt gta ccc cgt ata aat act ttg att ttg cgt act	2182
Asp Arg Asn Asn Val Val Pro Arg Ile Asn Thr Leu Ile Leu Arg Thr	
674 679 684 689	
aac cag cag tac ctc aat tta ata tct aca tca gta act gct gat gtt	2230
Asn Gln Gln Tyr Leu Asn Leu Ile Ser Thr Ser Val Thr Ala Asp Val	
690 695 700 705	
gaa gat ttc tct act ttc ttt ttc ttg gat tca caa gat aag agt gct	2278
Glu Asp Phe Ser Thr Phe Phe Phe Leu Asp Ser Gln Asp Lys Ser Ala	
706 711 716 721	
gta att gca aag aac atg tat tat tta acc caa gac gat gag agt ata	2326
Val Ile Ala Lys Asn Met Tyr Tyr Leu Thr Gln Asp Asp Glu Ser Ile	
722 727 732 737	
att tct gca gtc act ctc tgg att att gca gat ttt gat aag cct tct	2374
Ile Ser Ala Val Thr Leu Trp Ile Ile Ala Asp Phe Asp Lys Pro Ser	
738 743 748 753	
ggg aga aaa ctt ctt ttt aat gca tta aag cac atg aaa aca agt gtt	2422
Gly Arg Lys Leu Leu Phe Asn Ala Leu Lys His Met Lys Thr Ser Val	
754 759 764 769	
cat agt cgg ttg ggg att att tat aat cct aca tca aaa ata aat gaa	2470
His Ser Arg Leu Gly Ile Ile Tyr Asn Pro Thr Ser Lys Ile Asn Glu	
770 775 780 785	
gag aac aca gct att tct aga gga att ttg gca gct ttt ctt aca cag	2518
Glu Asn Thr Ala Ile Ser Arg Gly Ile Leu Ala Ala Phe Leu Thr Gln	
786 791 796 801	
aag aac atg ttt ttg aga agc ttt ctt ggg caa ctg gca aag gaa gaa	2566
Lys Asn Met Phe Leu Arg Ser Phe Leu Gly Gln Leu Ala Lys Glu Glu	

802	807	812	817	
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818 823 828 833				
gag ggg atg gat aag aat gct ttt gag aaa aaa tat aat act gtt gga	2662			
Glu Gly Met Asp Lys Asn Ala Phe Glu Lys Lys Tyr Asn Thr Val Gly				
834 839 844 849				
gtg aat att ttt cga act cac cag ttg ttc tgt caa gat gta ctt aaa	2710			
Val Asn Ile Phe Arg Thr His Gln Leu Phe Cys Gln Asp Val Leu Lys				
850 855 860 865				
tta cgt cct gga gaa atg ggt att gtc agc aat ggg aga ttc tta gga	2758			
Leu Arg Pro Gly Glu Met Gly Ile Val Ser Asn Gly Arg Phe Leu Gly				
866 871 876 881				
cct tta gat gaa gat ttt tat gca gaa gat ttt tac ttg ttg gaa aag	2806			
Pro Leu Asp Glu Asp Phe Tyr Ala Glu Asp Phe Tyr Leu Leu Glu Lys				
882 887 892 897				
ata aca ttt agt aat tta gga gag aaa att aaa ggc att gtt gaa aat	2854			
Ile Thr Phe Ser Asn Leu Gly Glu Lys Ile Lys Gly Ile Val Glu Asn				
898 903 908 913				
atg gga atc aac gca aat aac atg agt gac ttt att atg aaa gtt gat	2902			
Met Gly Ile Asn Ala Asn Asn Met Ser Asp Phe Ile Met Lys Val Asp				
914 919 924 929				
gcc ctt atg tcc tct gtg cct aag cgt gca tct cga tat gat gtc aca	2950			
Ala Leu Met Ser Ser Val Pro Lys Arg Ala Ser Arg Tyr Asp Val Thr				
930 935 940 945				
ttt ctt agg gag aat cac agt gtt ata aag acg aat cct caa gag aat	2998			
Phe Leu Arg Glu Asn His Ser Val Ile Lys Thr Asn Pro Gln Glu Asn				
946 951 956 961				
gat atg ttc ttc aat gtc att gct att gtt gat cca tta aca aga gaa	3046			
Asp Met Phe Phe Asn Val Ile Ala Ile Val Asp Pro Leu Thr Arg Glu				
962 967 972 977				
gca cag aaa atg gca cag ttg ttg gtt gta ctt ggc aag att atc aac	3094			
Ala Gln Lys Met Ala Gln Leu Leu Val Val Leu Gly Lys Ile Ile Asn				
978 983 988 993				
atg aag ata aag ttg ttc atg aac tgt agg ggc agg ctt tca gaa gcc	3142			
Met Lys Ile Lys Leu Phe Met Asn Cys Arg Gly Arg Leu Ser Glu Ala				
994 999 1004 1009				
cct tta gaa agc ttt tac cgt ttt gtt ctg gaa cca gaa ctg atg tca	3190			
Pro Leu Glu Ser Phe Tyr Arg Phe Val Leu Glu Pro Glu Leu Met Ser				
1010 1015 1020 1025				
ggg gct aat gac gtt tct tct ctt gga cca gtg gca aaa ttt ttg gat	3238			
Gly Ala Asn Asp Val Ser Ser Leu Gly Pro Val Ala Lys Phe Leu Asp				
1026 1031 1036 1041				

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Tyr Gln Ile Val Gly His Glu Gly Thr Asp Ser Gln Ala Asp Leu Glu	
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1250 1255 1260 1265	

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Leu Lys Asn Tyr Leu Ser Pro Thr Phe Lys Glu Val Ile Pro His Met	
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Ala Lys Glu Tyr Gly Phe Arg Tyr Glu Leu Val Gln Tyr Arg Trp Pro	
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Ile Phe Val Asp Ala Asp Gln Ile Val Arg His Asp Leu Lys Glu Leu	
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Arg Asp Phe Asp Leu Asp Gly Ala Pro Tyr Gly Tyr Thr Pro Phe Cys	
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Cys Ser Arg Ser Arg Ser Gly Arg Met Glu Gly Ala Lys Gly Lys Glu
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Gln Tyr Leu Val Pro His Pro Leu Leu Pro Thr Thr Ser Lys Ala Lys	
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Ala Leu Trp Leu Ser Gln Leu Gly Ser Gly Thr Val Ala Ala Ser Lys
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tcg gtg act gcc cac ttg gcc gcg aag tgg ccc gag acc ccg ctg ctg 262
Ser Val Thr Ala His Leu Ala Ala Lys Trp Pro Glu Thr Pro Leu Leu
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Gln Phe Leu Glu Thr Val Gln Glu Leu Ala Ile Tyr Lys Gln Thr Glu
66 71 76 81
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Ser Asp Tyr Ser Tyr Tyr Asn Leu Ile Leu Lys Lys Ala Gly Gln Phe
82 87 92 97
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162 167 172 177
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Phe His Asn Leu Val Leu Phe Ile Asp Pro Ala Gln Glu Tyr Thr Leu	
482 487 492 497	
gat ttt ata aaa ctt gct gat gtt ttc tat tct cac gaa gtt cct ctt	1654
Asp Phe Ile Lys Leu Ala Asp Val Phe Tyr Ser His Glu Val Pro Leu	
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Arg Ile Gly Phe Val Phe Ile Leu Asn Thr Asp Asp Glu Val Asp Gly	
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gca aat gat gct gga gtt gct ctc tgg cga gct ttc aac tat att gca	1750
Ala Asn Asp Ala Gly Val Ala Leu Trp Arg Ala Phe Asn Tyr Ile Ala	
530 535 540 545	
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Glu Glu Phe Asp Ile Ser Glu Ala Phe Ile Ser Ile Val His Met Tyr	
546 551 556 561	
caa aaa gtg aag aag gat caa aat ata ctc act gtg gac aat gtg aag	1846
Gln Lys Val Lys Lys Asp Gln Asn Ile Leu Thr Val Asp Asn Val Lys	
562 567 572 577	
agt gtt ctc caa aat aca ttt cct cat gct aat att tgg gat att ttg	1894
Ser Val Leu Gln Asn Thr Phe Pro His Ala Asn Ile Trp Asp Ile Leu	
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gga att cat tct aaa tat gat gaa gaa aga aag gct gga gca agc ttt	1942
Gly Ile His Ser Lys Tyr Asp Glu Glu Arg Lys Ala Gly Ala Ser Phe	
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tat aag atg act ggc ctg ggt cct ttg cct caa gct ctt tat aat ggt	1990
Tyr Lys Met Thr Gly Leu Gly Pro Leu Pro Gln Ala Leu Tyr Asn Gly	
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gaa ccc ttt aaa cat gaa gag atg aat att aaa gaa cta aaa atg gct	2038
Glu Pro Phe Lys His Glu Glu Met Asn Ile Lys Glu Leu Lys Met Ala	
626 631 636 641	
gtt ctt caa aga atg atg gat gca tct gta tat tta caa aga gaa gtt	2086
Val Leu Gln Arg Met Met Asp Ala Ser Val Tyr Leu Gln Arg Glu Val	
642 647 652 657	

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Phe Leu Gly Thr Leu Asn Asp Arg Thr Asn Ala Ile Asp Phe Leu Met	
658 663 668 673	
gat agg aat aat gtt gta ccc cgt ata aat act ttg att ttg cgt act	2182
Asp Arg Asn Asn Val Val Pro Arg Ile Asn Thr Leu Ile Leu Arg Thr	
674 679 684 689	
aac cag cag tac ctc aat tta ata tct aca tca gta act gct gat gtt	2230
Asn Gln Gln Tyr Leu Asn Leu Ile Ser Thr Ser Val Thr Ala Asp Val	
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Glu Asp Phe Ser Thr Phe Phe Phe Leu Asp Ser Gln Asp Lys Ser Ala	
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Val Ile Ala Lys Asn Met Tyr Tyr Leu Thr Gln Asp Asp Glu Ser Ile	
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Ile Ser Ala Val Thr Leu Trp Ile Ile Ala Asp Phe Asp Lys Pro Ser	
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His Ser Arg Leu Gly Ile Ile Tyr Asn Pro Thr Ser Lys Ile Asn Glu	
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Lys Asn Met Phe Leu Arg Ser Phe Leu Gly Gln Leu Ala Lys Glu Glu	
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Ile Ala Thr Ala Ile Tyr Ser Gly Asp Lys Ile Lys Thr Phe Leu Ile	
818 823 828 833	
gag ggg atg gat aag aat gct ttt gag aaa aaa tat aat act gtt gga	2662
Glu Gly Met Asp Lys Asn Ala Phe Glu Lys Lys Tyr Asn Thr Val Gly	
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Val Asn Ile Phe Arg Thr His Gln Leu Phe Cys Gln Asp Val Leu Lys	
850 855 860 865	
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Leu Arg Pro Gly Glu Met Gly Ile Val Ser Asn Gly Arg Phe Leu Gly	
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Met	Gly	Ile	Asn	Ala	Asn	Asn	Met	Ser	Asp	Phe	Ile	Met	Lys	Val	Asp	
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gcc	ctt	atg	tcc	tct	gtg	cct	aag	cgt	gca	tct	cga	tat	gat	gtc	aca	2950
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Asp	Met	Phe	Phe	Asn	Val	Ile	Ala	Ile	Val	Asp	Pro	Leu	Thr	Arg	Glu	
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gca	cag	aaa	atg	gca	cag	ttg	ttg	gtt	gta	ctt	ggc	aag	att	atc	aac	3094
Ala	Gln	Lys	Met	Ala	Gln	Leu	Leu	Val	Val	Leu	Gly	Lys	Ile	Ile	Asn	
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Gly	Ala	Asn	Asp	Val	Ser	Ser	Leu	Gly	Pro	Val	Ala	Lys	Phe	Leu	Asp	
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Trp	Leu	Val	Glu	Thr	Val	His	Ser	Asn	Cys	Asp	Leu	Asp	Asn	Ile	His	
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Leu	Lys	Asp	Thr	Glu	Lys	Thr	Val	Thr	Ala	Glu	Tyr	Glu	Leu	Glu	Tyr	
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Leu	Leu	Leu	Glu	Gly	Gln	Cys	Phe	Asp	Lys	Val	Thr	Glu	Gln	Pro	Pro	
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cgg	ggt	ctg	cag	ttc	aca	cta	ggc	aca	aaa	aat	aaa	cct	gct	gtg	gtt	3478
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Pro Gly Ala Trp Ile Leu Arg Leu His Gln Gly Lys Ser Glu Asp Ile				
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Tyr Gln Ile Val Gly His Glu Gly Thr Asp Ser Gln Ala Asp Leu Glu				
1154	1159	1164	1169	
gat atc att gtt gta tta aac agc ttc aaa agc aag ata ctc aaa gta				3670
Asp Ile Ile Val Val Leu Asn Ser Phe Lys Ser Lys Ile Leu Lys Val				
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Lys Val Lys Lys Glu Thr Asp Lys Ile Lys Glu Asp Ile Leu Thr Asp				
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Phe Ser Val Ala Ser Gly His Leu Tyr Glu Arg Phe Leu Arg Ile Met				
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Met Leu Ser Val Leu Arg Asn Thr Lys Thr Pro Val Lys Phe Trp Leu				
1250	1255	1260	1265	
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Leu Lys Asn Tyr Leu Ser Pro Thr Phe Lys Glu Val Ile Pro His Met				
1266	1271	1276	1281	
gct aaa gag tat gga ttc cga tat gaa cta gtt caa tat agg tgg ccc				4006
Ala Lys Glu Tyr Gly Phe Arg Tyr Glu Leu Val Gln Tyr Arg Trp Pro				
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Arg Trp Leu Arg Gln Gln Thr Glu Arg Gln Arg Ile Ile Trp Gly Tyr				
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aaa att ctt ttc ctt gat gtt ctt ttc cca cta gca gtg gac aaa atc				4102
Lys Ile Leu Phe Leu Asp Val Leu Phe Pro Leu Ala Val Asp Lys Ile				
1314	1319	1324	1329	
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Ile Phe Val Asp Ala Asp Gln Ile Val Arg His Asp Leu Lys Glu Leu				
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Trp Ala Ser His Leu Leu Arg Arg Lys Tyr His Ile Ser Ala Leu Tyr	
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Arg Ser Gln Tyr Gln Ala Leu Ser Gln Asp Pro Asn Ser Leu Ser Asn	
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Leu Asp Gln Asp Leu Pro Asn Asn Met Ile Tyr Gln Val Ala Ile Lys	
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Ser Leu Pro Gln Asp Trp Leu Trp Cys Glu Thr Trp Cys Asp Asp Glu	
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男性人口	人	612,345
女性人口	人	622,222
人口密度	人/平方キロメートル	123.45
出生率	人/1,000人	10.5
死亡率	人/1,000人	8.2
自然増減率	人/1,000人	2.3
平均年齢	歳	32.1
出生時平均寿命	歳	75.4
5歳未満人口	人	15,678
65歳以上人口	人	25,789
労働人口	人	456,789
失業率	%	5.2
所得総額	億円	1,234.56
一人当たり所得	円	123,456
財政収支	億円	123.45
教育費	億円	56.78
保健費	億円	34.56
社会福祉費	億円	23.45
警察費	億円	12.34
消防費	億円	8.76
文化・スポーツ費	億円	4.56
環境費	億円	3.21
交通費	億円	2.10
建設費	億円	1.98
その他	億円	0.99

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Ser Cys Thr Glu Leu Gln Glu Leu Lys Gln Leu Ala Arg Gln Gly Tyr	
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Ala Arg Gly Glu Gly Ala Val Arg Lys Ile Leu Leu Cys Leu Ala Asn	
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Leu Leu Leu His Tyr Ser Ile Asp Glu Ala Glu Cys Phe Glu Lys Ala	
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Cys Arg Ile Leu Ala Cys Asn Asp Pro Gly Arg Arg Leu Ile Asp Gln	
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Ser Phe Leu Ala Phe Glu Ser Ser Cys Met Thr Phe Gly Asp Leu Val	
172 177 182 187	
aac aag tac tgc cag gcg gcc cac aag ctg atg gtg gcc gtg tgc gag	808
Asn Lys Tyr Cys Gln Ala Ala His Lys Leu Met Val Ala Val Ser Glu	
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gat gtc ctg cag gtc tat gcg gac tgg cag cgc tgg ctg ttt ggg gag	856
Asp Val Leu Gln Val Tyr Ala Asp Trp Gln Arg Trp Leu Phe Gly Glu	
204 209 214 219	
ctg ccc ctc tgc tac ttc gcc cgg gtc ttt gac gtc ttc ctg gtg gag	904
Leu Pro Leu Cys Tyr Phe Ala Arg Val Phe Asp Val Phe Leu Val Glu	

220	225	230	235	
ggc tac aag gtg ctg tac cgc gtg gcg ctg gcc atc ctc aag ttc ttc				952
Gly Tyr Lys Val Leu Tyr Arg Val Ala Leu Ala Ile Leu Lys Phe Phe				
236	241	246	251	
cat aag gtg agg gcc ggg cag ccg ctg gag tgc gac agc gtg aag cag				1000
His Lys Val Arg Ala Gly Gln Pro Leu Glu Ser Asp Ser Val Lys Gln				
252	257	262	267	
gac atc cgc acg ttc gtc aga gac atc gcg aag acg gtg tcc cct gag				1048
Asp Ile Arg Thr Phe Val Arg Asp Ile Ala Lys Thr Val Ser Pro Glu				
268	273	278	283	
aag ctg ctg gag aaa gcg ttc gcc atc cgc ctc ttg tcc cgc aag gag				1096
Lys Leu Leu Glu Lys Ala Phe Ala Ile Arg Leu Leu Ser Arg Lys Glu				
284	289	294	299	
atc cag ctc ctg cag atg gcc aat gag aaa gcc ctg aag cag aag gcc				1144
Ile Gln Leu Leu Gln Met Ala Asn Glu Lys Ala Leu Lys Gln Lys Gly				
300	305	310	315	
atc acc gtg aag cag aag agt gtg tca ctt tct aaa agg cag ttt gta				1192
Ile Thr Val Lys Gln Lys Ser Val Ser Leu Ser Lys Arg Gln Phe Val				
316	321	326	331	
cac ttg gcc gtc cat gca gag aac ttc cgc tgc gag atc gtc agc gtg				1240
His Leu Ala Val His Ala Glu Asn Phe Arg Ser Glu Ile Val Ser Val				
332	337	342	347	
agg gag atg aga gac atc tgg tcc tgg gtc ccc gag cgc ttt gcc ctg				1288
Arg Glu Met Arg Asp Ile Trp Ser Trp Val Pro Glu Arg Phe Ala Leu				
348	353	358	363	
tgc cag ccc ctt ctg ctg ttc tcc tcc ctg cag cac ggg tac agc ctg				1336
Cys Gln Pro Leu Leu Leu Phe Ser Ser Leu Gln His Gly Tyr Ser Leu				
364	369	374	379	
gcc agg ttc tac ttc cag tgt gaa gga cat gag cct acc ctc ttg ctc				1384
Ala Arg Phe Tyr Phe Gln Cys Glu Gly His Glu Pro Thr Leu Leu Leu				
380	385	390	395	
atc aag acc acg cag aag gag gtg tgt ggt gct tac ctg tcc aca gac				1432
Ile Lys Thr Thr Gln Lys Glu Val Cys Gly Ala Tyr Leu Ser Thr Asp				
396	401	406	411	
tgg agt gag aga aat aag ttt gga ggc aaa ctg ggc ttc ttt ggg acc				1480
Trp Ser Glu Arg Asn Lys Phe Gly Gly Lys Leu Gly Phe Phe Gly Thr				
412	417	422	427	
gga gaa tgc ttt gtg ttt agg ctg cag cct gag gtg cag cgc tac gag				1528
Gly Glu Cys Phe Val Phe Arg Leu Gln Pro Glu Val Gln Arg Tyr Glu				
428	433	438	443	
tgg gtg gtg atc aag cac ccc gag ctg acc aag ccc cca ccc ttg atg				1576
Trp Val Val Ile Lys His Pro Glu Leu Thr Lys Pro Pro Pro Leu Met				
444	449	454	459	

gct gcc gag ccc acc gcc cca ctc agc cac tcc gcc tcc tca gac ccc	1624
Ala Ala Glu Pro Thr Ala Pro Leu Ser His Ser Ala Ser Ser Asp Pro	
460 465 470 475	
gct gac cgc ctc tcg ccc ttc ctg gcc gct cgc cac ttc aac ctg ccc	1672
Ala Asp Arg Leu Ser Pro Phe Leu Ala Ala Arg His Phe Asn Leu Pro	
476 481 486 491	
tcc aag acc gag tcc atg ttc atg gcg ggg ggc agc gac tgc ctc atc	1720
Ser Lys Thr Glu Ser Met Phe Met Ala Gly Gly Ser Asp Cys Leu Ile	
492 497 502 507	
gtc ggg gga gga ggc ggc cag gcg ctc tac atc gat ggg gac ctg aac	1768
Val Gly Gly Gly Gly Gly Gln Ala Leu Tyr Ile Asp Gly Asp Leu Asn	
508 513 518 523	
cgg ggc cgc aca agc cac tgc gac acc ttc aac aac cag ccc ctc tgc	1816
Arg Gly Arg Thr Ser His Cys Asp Thr Phe Asn Asn Gln Pro Leu Cys	
524 529 534 539	
tcc gag aac ttc ctc att gct gcc gtg aag gcc tgg ggc ttc cag gac	1864
Ser Glu Asn Phe Leu Ile Ala Ala Val Lys Ala Trp Gly Phe Gln Asp	
540 545 550 555	
cct gac acc cag tga cggcctgtgc cacggtgact gagccgtggt ggggcggtgg	1919
Pro Asp Thr Gln *	
556	
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Met Pro Gly Ser Asp Thr Ala Leu Thr Val	
1 5	
gac cgg acc tac tcg gac ccc ggc cgg cac cac cgc tgc aag agc cgg	159
Asp Arg Thr Tyr Ser Asp Pro Gly Arg His His Arg Cys Lys Ser Arg	
11 16 21 26	
gta gaa cgt cat gac atg aat acc tta agc ctg ccc ctg aac ata cgc	207

Val	Glu	Arg	His	Asp	Met	Asn	Thr	Leu	Ser	Leu	Pro	Leu	Asn	Ile	Arg	
27					32					37					42	
cga	ggg	ggg	tca	gac	acc	aac	ctc	aac	ttt	gat	gtc	ccg	gat	ggc	atc	255
Arg	Gly	Gly	Ser	Asp	Thr	Asn	Leu	Asn	Phe	Asp	Val	Pro	Asp	Gly	Ile	
43					48					53					58	
ctg	gac	ttc	cac	aag	gtc	aaa	ctc	act	gca	gac	agc	ctg	aag	caa	aaa	303
Leu	Asp	Phe	His	Lys	Val	Lys	Leu	Thr	Ala	Asp	Ser	Leu	Lys	Gln	Lys	
59					64					69					74	
att	cta	aag	gta	aca	gag	cag	ata	aaa	att	gag	caa	aca	tcg	cgc	gat	351
Ile	Leu	Lys	Val	Thr	Glu	Gln	Ile	Lys	Ile	Glu	Gln	Thr	Ser	Arg	Asp	
75					80					85					90	
ggg	aat	gtt	gcg	gag	tat	ctg	aaa	cta	gtg	aac	aac	gcg	gac	aag	cag	399
Gly	Asn	Val	Ala	Glu	Tyr	Leu	Lys	Leu	Val	Asn	Asn	Ala	Asp	Lys	Gln	
91					96					101					106	
cag	gcg	gga	cgt	atc	aag	caa	gtc	ttt	gag	aag	aag	aat	cag	aaa	tca	447
Gln	Ala	Gly	Arg	Ile	Lys	Gln	Val	Phe	Glu	Lys	Lys	Asn	Gln	Lys	Ser	
107					112					117					122	
gct	cac	tcc	atc	gcc	cag	ctg	cag	aag	aag	tta	gag	cag	tat	cat	cga	495
Ala	His	Ser	Ile	Ala	Gln	Leu	Gln	Lys	Lys	Leu	Glu	Gln	Tyr	His	Arg	
123					128					133					138	
aag	ctc	aga	gag	atc	gag	cag	aat	gga	gcc	tct	agg	agc	tca	aag	gac	543
Lys	Leu	Arg	Glu	Ile	Glu	Gln	Asn	Gly	Ala	Ser	Arg	Ser	Ser	Lys	Asp	
139					144					149					154	
att	tcc	aaa	gac	cac	ctg	aag	gat	ata	cat	cgc	tct	ttg	aaa	gat	gcc	591
Ile	Ser	Lys	Asp	His	Leu	Lys	Asp	Ile	His	Arg	Ser	Leu	Lys	Asp	Ala	
155					160					165					170	
cac	gtg	aaa	tct	cga	act	gcc	ccc	cat	tgc	atg	gag	agc	agc	aaa	tcg	639
His	Val	Lys	Ser	Arg	Thr	Ala	Pro	His	Cys	Met	Glu	Ser	Ser	Lys	Ser	
171					176					181					186	
ggc	atg	cca	ggg	gtc	tca	ctt	act	cca	cct	gtg	ttc	gtt	ttc	aat	aag	687
Gly	Met	Pro	Gly	Val	Ser	Leu	Thr	Pro	Pro	Val	Phe	Val	Phe	Asn	Lys	
187					192					197					202	
tcc	aga	gag	ttt	gcc	aac	ctg	atc	cgg	aat	aag	ttt	ggc	agc	gcc	gac	735
Ser	Arg	Glu	Phe	Ala	Asn	Leu	Ile	Arg	Asn	Lys	Phe	Gly	Ser	Ala	Asp	
203					208					213					218	
aac	att	gct	cac	ttg	aaa	aat	tcc	tta	gag	gag	ttt	agg	cca	gag	gcg	783
Asn	Ile	Ala	His	Leu	Lys	Asn	Ser	Leu	Glu	Glu	Phe	Arg	Pro	Glu	Ala	
219					224					229					234	
agt	gcc	agg	gcc	tac	ggg	ggc	agc	gct	acc	atc	gtg	aac	aaa	ccc	aag	831
Ser	Ala	Arg	Ala	Tyr	Gly	Gly	Ser	Ala	Thr	Ile	Val	Asn	Lys	Pro	Lys	
235					240					245					250	
tat	ggc	agt	gat	gat	gaa	tgt	tcg	agt	ggc	acg	tca	ggc	tcg	gcc	gac	879
Tyr	Gly	Ser	Asp	Asp	Glu	Cys	Ser	Ser	Gly	Thr	Ser	Gly	Ser	Ala	Asp	

251	256	261	266	
agt aac gga aac cag tcg ttt ggg gct ggt gga gcc agc aca ctg gac				927
Ser Asn Gly Asn Gln Ser Phe Gly Ala Gly Gly Ala Ser Thr Leu Asp				
267	272	277	282	
agc cag ggc aag ctc gcc gtg atc ctg gag gaa ctg agg gag atc aag				975
Ser Gln Gly Lys Leu Ala Val Ile Leu Glu Glu Leu Arg Glu Ile Lys				
283	288	293	298	
gat acc caa gct cag ctg gct gag gac atc gag gca ctg aag gtg cag				1023
Asp Thr Gln Ala Gln Leu Ala Glu Asp Ile Glu Ala Leu Lys Val Gln				
299	304	309	314	
ttt aag aga gaa tat ggt ttt att tct cag acc ctg caa gag gaa aga				1071
Phe Lys Arg Glu Tyr Gly Phe Ile Ser Gln Thr Leu Gln Glu Glu Arg				
315	320	325	330	
tac agg tat gag cga ctg gag gac cag ctg cat gac ctg acg gac ctg				1119
Tyr Arg Tyr Glu Arg Leu Glu Asp Gln Leu His Asp Leu Thr Asp Leu				
331	336	341	346	
cat cag cat gag aca gcc aac ctg aag cag gag ctg gcc agc att gag				1167
His Gln His Glu Thr Ala Asn Leu Lys Gln Glu Leu Ala Ser Ile Glu				
347	352	357	362	
gag aag gtg gcc tac cag gcc tac gag cgc tcg cgg gac atc cag gaa				1215
Glu Lys Val Ala Tyr Gln Ala Tyr Glu Arg Ser Arg Asp Ile Gln Glu				
363	368	373	378	
gcc ttg gaa tcc tgc cag act cgc att tct aag ctg gag ctc cac cag				1263
Ala Leu Glu Ser Cys Gln Thr Arg Ile Ser Lys Leu Glu Leu His Gln				
379	384	389	394	
caa gag cag caa gct ctg cag aca gac acc gtg aat gct aaa gtt ctc				1311
Gln Glu Gln Gln Ala Leu Gln Thr Asp Thr Val Asn Ala Lys Val Leu				
395	400	405	410	
ctg ggg agg tgc atc aac gtg atc ctg gcc ttc atg act gtc atc tta				1359
Leu Gly Arg Cys Ile Asn Val Ile Leu Ala Phe Met Thr Val Ile Leu				
411	416	421	426	
gtg tgt gtg tcc acc atc gcg aag ttc gtc tca ccc atg atg aag agt				1407
Val Cys Val Ser Thr Ile Ala Lys Phe Val Ser Pro Met Met Lys Ser				
427	432	437	442	
cgc tgc cac att ctt ggc acc ttc ttt gcc gtg act ctt ctt gct ata				1455
Arg Cys His Ile Leu Gly Thr Phe Phe Ala Val Thr Leu Leu Ala Ile				
443	448	453	458	
ttt tgt aaa aac tgg gac cat atc ctg tgt gcc ata gaa agg atg ata				1503
Phe Cys Lys Asn Trp Asp His Ile Leu Cys Ala Ile Glu Arg Met Ile				
459	464	469	474	
ata cca aga tga agc cactgggttcc tgccttcaag ttctttcaag tttttatttt				1558
Ile Pro Arg *				
475				

aaagaaaact ctgtgcatac taccaaattt tacagtgaat gattgtgcgg actcgtgtgt 1618
aagaaaaact aggactgtgt ggtgtaaata actacaattc tcttaactcg gtagcagttg 1678
ccaactcagt ccttgtactt cgtaacacg gatctgtttc agagctctcc taccttgctc 1738
actgccttaa tcagaccgat ttctgcccc cctgaccagc ccaacgtggt aaacctctgt 1798

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agggcttggc ggggtccgga ggttgacctc gccccgcag cgggccttcg aggctgcctc 180
ctccaggcag cctctggggc ccgcgccgc gctgtctcag gctcccggtg tcaggctgcc 240
catccctccc ccaccggcgt cccggacgtt gggacctgtg accgtggcct cgggctgggc 300
ttccaaagcc ggccgcagcc cggcgacccc cgaggcctct cggccgggc cctagacct 360
ctcact atg acc gcg gcc gcc gcc tcc aac tgg ggg ctg atc acg aac 408
Met Thr Ala Ala Ala Ala Ser Asn Trp Gly Leu Ile Thr Asn
1 5 10
atc gtg aac agc atc gta ggg gtc agt gtc ctc acc atg ccc ttc tgc 456
Ile Val Asn Ser Ile Val Gly Val Ser Val Leu Thr Met Pro Phe Cys
15 20 25 30
ttc aaa cag tgc ggc atc gtc ctg ggg gcg ctg ctc ttg gtc ttc tgc 504
Phe Lys Gln Cys Gly Ile Val Leu Gly Ala Leu Leu Leu Val Phe Cys
31 36 41 46
tca tgg atg acg cac cag tgc gtc atg ttc ttg gtg aag tgc gcc agc 552
Ser Trp Met Thr His Gln Ser Cys Met Phe Leu Val Lys Ser Ala Ser
47 52 57 62
ctg agc aag cgg agg acc tac gcc ggc ctg gca ttc cac gcc tac ggg 600
Leu Ser Lys Arg Arg Thr Tyr Ala Gly Leu Ala Phe His Ala Tyr Gly
63 68 73 78
aag gca ggc aag atg ctg gtg gag acc agc atg atc ggg ctg atg ctg 648
Lys Ala Gly Lys Met Leu Val Glu Thr Ser Met Ile Gly Leu Met Leu
79 84 89 94

ggc acc tgc atc gcc ttc tac gtc gtg atc ggc gac ttg ggg tcc aac	696
Gly Thr Cys Ile Ala Phe Tyr Val Val Ile Gly Asp Leu Gly Ser Asn	
95 100 105 110	
ttc ttt gcc cgg ctg ttc ggg ttt cag gtg ggc ggc acc ttc cgc atg	744
Phe Phe Ala Arg Leu Phe Gly Phe Gln Val Gly Gly Thr Phe Arg Met	
111 116 121 126	
ttc ctg ctg ttc gcc gtg tcg ctg tgc atc gtg ctc ccg ctc agc ctg	792
Phe Leu Leu Phe Ala Val Ser Leu Cys Ile Val Leu Pro Leu Ser Leu	
127 132 137 142	
cag cgg aac atg atg gcc tcc atc cag tcc ttc agc gcc atg gcc ctc	840
Gln Arg Asn Met Met Ala Ser Ile Gln Ser Phe Ser Ala Met Ala Leu	
143 148 153 158	
ctc ttc tac acc gtg ttt atg ttc gtg atc gtg ctc tcc cct ctc aag	888
Leu Phe Tyr Thr Val Phe Met Phe Val Ile Val Leu Ser Pro Leu Lys	
159 164 169 174	
cac ggc ctc ttc agt ggg cag tgg ctg cgg cgg gtc agc tac gtc cgc	936
His Gly Leu Phe Ser Gly Gln Trp Leu Arg Arg Val Ser Tyr Val Arg	
175 180 185 190	
tgg gag ggc gtc ttc cgc tgc atc ccc atc ttc ggg cat gtc ctt cgc	984
Trp Glu Gly Val Phe Arg Cys Ile Pro Ile Phe Gly His Val Leu Arg	
191 196 201 206	
ctg cca gtc cca agt gct gcc cac cta cga cag cct gga tga gccgtca	1033
Leu Pro Val Pro Ser Ala Ala His Leu Arg Gln Pro Gly *	
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gtgat	1038

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tctttggact tagaagatga cctggataaa tgataaaaat taagaaagag attttgaaagt	180
tttcttattg tcctcttggc atatgcttct ggaataatat tcacc atg gtt ttg	234
	Met Val Leu

gat gac ctt cca aac tta gaa gac atc tat act tcc ttg tgt tca tca	282
Asp Asp Leu Pro Asn Leu Glu Asp Ile Tyr Thr Ser Leu Cys Ser Ser	
4 9 14 19	
aca atg gaa gac tca gag atg gat ttt gac tct gga cta gaa gat gat	330
Thr Met Glu Asp Ser Glu Met Asp Phe Asp Ser Gly Leu Glu Asp Asp	
20 25 30 35	
gac aca aaa agt gat agt att ttg gag gat tcc aca att ttt gtg gcc	378
Asp Thr Lys Ser Asp Ser Ile Leu Glu Asp Ser Thr Ile Phe Val Ala	
36 41 46 51	
ttc aaa gga aat ata gat gat aaa gac ttc aaa tgg aaa tta gat gca	426
Phe Lys Gly Asn Ile Asp Asp Lys Asp Phe Lys Trp Lys Leu Asp Ala	
52 57 62 67	
ata ttg aaa aac gtg ccc aat ttg tta cac atg gag tcc agc aag cta	474
Ile Leu Lys Asn Val Pro Asn Leu Leu His Met Glu Ser Ser Lys Leu	
68 73 78 83	
aaa gta cag aag gtg gag ccc tgg aac agc gtg cgt gtg aca ttc aac	522
Lys Val Gln Lys Val Glu Pro Trp Asn Ser Val Arg Val Thr Phe Asn	
84 89 94 99	
atc ccc cgg gaa gca gcg gag cgg cta cgg atc ctt gct cag agc aac	570
Ile Pro Arg Glu Ala Ala Glu Arg Leu Arg Ile Leu Ala Gln Ser Asn	
100 105 110 115	
aac cag cag ctt cgg gat tta ggg att ctc tcc gtt cag att gaa ggg	618
Asn Gln Gln Leu Arg Asp Leu Gly Ile Leu Ser Val Gln Ile Glu Gly	
116 121 126 131	
gaa ggt gct att aac ctg gct ttg gct cag aac cga agc caa gat gtg	666
Glu Gly Ala Ile Asn Leu Ala Leu Ala Gln Asn Arg Ser Gln Asp Val	
132 137 142 147	
aga atg aat gga ccc atg gga gct gga aat tca gtt agg atg gag gcg	714
Arg Met Asn Gly Pro Met Gly Ala Gly Asn Ser Val Arg Met Glu Ala	
148 153 158 163	
gga ttt cct atg gca agt ggt cca gga ata ata agg atg aac aac cct	762
Gly Phe Pro Met Ala Ser Gly Pro Gly Ile Ile Arg Met Asn Asn Pro	
164 169 174 179	
gcc act gtt atg ata ccc ccg ggt gga aat gtg tca tct tcc atg atg	810
Ala Thr Val Met Ile Pro Pro Gly Gly Asn Val Ser Ser Ser Met Met	
180 185 190 195	
gca cca ggc ccc aat cca gag ctg cag ccc agg act cct cgc cct gct	858
Ala Pro Gly Pro Asn Pro Glu Leu Gln Pro Arg Thr Pro Arg Pro Ala	
196 201 206 211	
tct cag tca gat gca atg gat cca ctc ctc tct ggg ctc cat ata cag	906
Ser Gln Ser Asp Ala Met Asp Pro Leu Leu Ser Gly Leu His Ile Gln	
212 217 222 227	

cag caa agt cat ccc tca gga tct tta gct ccc cca cat cac cca atg Gln Gln Ser His Pro Ser Gly Ser Leu Ala Pro Pro His His Pro Met 228 233 238 243	954
cag cct gtc tct gtg aac aga caa atg aac cca gct aat ttt ccc cag Gln Pro Val Ser Val Asn Arg Gln Met Asn Pro Ala Asn Phe Pro Gln 244 249 254 259	1002
ctg cag cag cag cag caa caa caa caa cag cag cag cag cag cag cag Leu Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln 260 265 270 275	1050
cag caa caa cag caa cag cag caa caa cag ttg cag gca aga ccc cca Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln 276 281 286 291	1098
cag caa cat cag cag caa cag cca cag gga att cga ccc cag ttt act Gln Gln His Gln Gln Gln Gln Pro Gln Gly Ile Arg Pro Gln Phe Thr 292 297 302 307	1146
gcc cca act cag gtg cct gtt cct cca gcc tgg aac cag ctg cct tct Ala Pro Thr Gln Val Pro Val Pro Pro Gly Trp Asn Gln Leu Pro Ser 308 313 318 323	1194
gga gcc ctt caa cct cct cca gcc cag ggt tct ctg gcc aca atg act Gly Ala Leu Gln Pro Pro Pro Ala Gln Gly Ser Leu Gly Thr Met Thr 324 329 334 339	1242
gca aac caa ggg tgg aag aag gct ccc ttg ccc gcc cca atg caa cag Ala Asn Gln Gly Trp Lys Lys Ala Pro Leu Pro Gly Pro Met Gln Gln 340 345 350 355	1290
caa ctc cag gca aga cca tcc tta gcc acg gta cag acg cct tcc cac Gln Leu Gln Ala Arg Pro Ser Leu Ala Thr Val Gln Thr Pro Ser His 356 361 366 371	1338
cct ccc cct cca tat ccc ttt ggc agc cag caa gcc tca caa gcc cac Pro Pro Pro Pro Tyr Pro Phe Gly Ser Gln Gln Ala Ser Gln Ala His 372 377 382 387	1386
aca aac ttt cct cag atg agc aac cca gcc cag ttc aca gct cct cag Thr Asn Phe Pro Gln Met Ser Asn Pro Gly Gln Phe Thr Ala Pro Gln 388 393 398 403	1434
atg aag agt ttg cag gga ggg ccc tct agg gtc cca act ccc ttg cag Met Lys Ser Leu Gln Gly Gly Pro Ser Arg Val Pro Thr Pro Leu Gln 404 409 414 419	1482
cag ccc cac ctc acc aac aag tct cct gcc tcc tca ccc tcc tcc ttc Gln Pro His Leu Thr Asn Lys Ser Pro Ala Ser Ser Pro Ser Ser Phe 420 425 430 435	1530
cag cag gga tcc cct gca tcc tcc cca acg gtt aac caa act cag cag Gln Gln Gly Ser Pro Ala Ser Ser Pro Thr Val Asn Gln Thr Gln Gln 436 441 446 451	1578
cag atg gga cca agg cca cct caa aat aac cca ctt ccc cag gga ttt	1626

Gln Met Gly Pro Arg Pro Pro Gln Asn Asn Pro Leu Pro Gln Gly Phe	
452 457 462 467	
cag cag cct gtc agc tct ccg ggt cgg aat cct atg gtt caa cag gga	1674
Gln Gln Pro Val Ser Ser Pro Gly Arg Asn Pro Met Val Gln Gln Gly	
468 473 478 483	
aat gtg cca cct aac ttc atg gtg atg cag cag caa cca cca aac cag	1722
Asn Val Pro Pro Asn Phe Met Val Met Gln Gln Gln Pro Pro Asn Gln	
484 489 494 499	
ggg cca cag agt tta cat cca ggc cta gga gga atg cct aaa cgc ctc	1770
Gly Pro Gln Ser Leu His Pro Gly Leu Gly Gly Met Pro Lys Arg Leu	
500 505 510 515	
cca cct ggc ttc tca gca gga cag gcc aat ccg aac ttt atg caa ggt	1818
Pro Pro Gly Phe Ser Ala Gly Gln Ala Asn Pro Asn Phe Met Gln Gly	
516 521 526 531	
cag gtg cct tcg acc aca gca acc acc cct ggg aat tca gga gcc cct	1866
Gln Val Pro Ser Thr Thr Ala Thr Thr Pro Gly Asn Ser Gly Ala Pro	
532 537 542 547	
cag ctg caa gca aat caa aat gtc cag cat gca ggt ggt caa gga gct	1914
Gln Leu Gln Ala Asn Gln Asn Val Gln His Ala Gly Gly Gln Gly Ala	
548 553 558 563	
ggg cct cct caa aac cag atg cag gtg tcc cac ggg ccg cca aat atg	1962
Gly Pro Pro Gln Asn Gln Met Gln Val Ser His Gly Pro Pro Asn Met	
564 569 574 579	
atg cag ccc agc ctc atg gga att cat ggc aac atg aac aat cag cag	2010
Met Gln Pro Ser Leu Met Gly Ile His Gly Asn Met Asn Asn Gln Gln	
580 585 590 595	
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Ala Gly Thr Ser Gly Val Pro Gln Val Asn Leu Ser Asn Met Gln Gly	
596 601 606 611	
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Gln Pro Gln Gln Gly Pro Pro Ser Gln Leu Met Gly Met His Gln Gln	
612 617 622 627	
atc gtg ccc tcc cag ggc cag atg gtc cag caa caa gga acc ttg aac	2154
Ile Val Pro Ser Gln Gly Gln Met Val Gln Gln Gln Gly Thr Leu Asn	
628 633 638 643	
cct cag aac cct atg atc ctt tca agg gcc cag ctt atg cca cag ggc	2202
Pro Gln Asn Pro Met Ile Leu Ser Arg Ala Gln Leu Met Pro Gln Gly	
644 649 654 659	
cag atg atg gtg aac ccc ccg agc caa aat ctt ggg ccc tcg ccc caa	2250
Gln Met Met Val Asn Pro Pro Ser Gln Asn Leu Gly Pro Ser Pro Gln	
660 665 670 675	
agg atg acc cca ccc aag cag atg ctt tcc cag cag ggc cca caa atg	2298
Arg Met Thr Pro Pro Lys Gln Met Leu Ser Gln Gln Gly Pro Gln Met	

676	681	686	691	
atg gcg cca cat aac	cag atg atg ggg cct	cag ggg cag gtt ttg ctc		2346
Met Ala Pro His Asn	Gln Met Met Gly Pro	Gln Gly Gln Val Leu Leu		
692	697	702	707	
caa cag aac cca atg	ata gag cag att atg	acc aat caa atg cag ggg		2394
Gln Gln Asn Pro Met	Ile Glu Gln Ile Met	Thr Asn Gln Met Gln Gly		
708	713	718	723	
aat aag cag cag ttt	aac act cag aac cag	tcc aat gtc atg ccg gga		2442
Asn Lys Gln Gln Phe	Asn Thr Gln Asn Gln	Ser Asn Val Met Pro Gly		
724	729	734	739	
cca gcc cag ata atg	agg gga cca act cca	aac atg caa gga aat atg		2490
Pro Ala Gln Ile Met	Arg Gly Pro Thr Pro	Asn Met Gln Gly Asn Met		
740	745	750	755	
gtg cag ttt acg gga	cag atg tca gga cag	atg ctg ccc cag caa ggg		2538
Val Gln Phe Thr Gly	Gln Met Ser Gly Gln	Met Leu Pro Gln Gln Gly		
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Pro Val Asn Asn Ser	Pro Ser Gln Val Met	Gly Ile Gln Gly Gln Val		
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Asp Val Ser Ile Gln	Gln Thr Asn Met Val	Pro Pro His Val Gln Ala		
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Met Gln Gly Asn Ser	Ala Ser Gly Asn His	Phe Ser Gly His Gly Met		
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Ser Phe Asn Ala Pro	Phe Ser Gly Ala Pro	Asn Gly Asn Gln Met Ser		
852	857	862	867	
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Cys Gly Gln Asn Pro	Gly Phe Pro Val Asn	Lys Asp Val Thr Leu Thr		
868	873	878	883	
agc cca ttg ttg gtc	aac tta ttg cag agt	gac ata tct gca ggc cat		2922
Ser Pro Leu Leu Val	Asn Leu Leu Gln Ser	Asp Ile Ser Ala Gly His		
884	889	894	899	
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Phe Gly Val Asn Asn	Lys Gln Asn Asn Thr	Asn Ala Asn Lys Pro Lys		
900	905	910	915	

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Lys Lys Lys Pro Pro Arg Lys Lys Lys Asn Ser Gln Gln Asp Leu Asn	
916 921 926 931	
acc cca gat act cgc cca gct ggt ctg gaa gag gct gat cag cca ccg	3066
Thr Pro Asp Thr Arg Pro Ala Gly Leu Glu Glu Ala Asp Gln Pro Pro	
932 937 942 947	
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Leu Pro Gly Glu Gln Gly Ile Ser Leu Asp Asn Ser Gly Pro Lys Leu	
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Pro Glu Phe Ser Asn Arg Pro Pro Gly Tyr Pro Ser Gln Pro Val Glu	
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Gln Arg Pro Leu Gln Gln Met Pro Pro Gln Leu Met Gln His Val Ala	
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Pro Pro Pro Gln Pro Pro Gln Gln Gln Pro Gln Pro Gln Leu Pro Gln	
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Gln Gln Gln Gln Gln Met Met Met Met Leu Met Met Gln Gln Asp Pro	
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Lys Ser Val Arg Leu Pro Val Ser Gln Asn Val His Pro Pro Arg Gly	
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Pro Leu Asn Pro Asp Ser Gln Arg Met Pro Met Gln Gln Ser Gly Ser	
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Val Pro Val Met Val Ser Leu Gln Gly Pro Ala Ser Val Pro Pro Ser	
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Pro Asp Lys Gln Arg Met Pro Met Pro Val Asn Thr Pro Leu Gly Ser	
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Asn Ser Arg Lys Met Val Tyr Gln Glu Ser Pro Gln Asn Pro Ser Ser	
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Ser Pro Leu Ala Glu Met Ala Ser Leu Pro Glu Ala Ser Gly Ser Glu	
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Ala Pro Ser Val Pro Gly Gly Pro Asn Asn Met Pro Ser His Val Val	
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Leu Pro Gln Asn Gln Leu Met Met Thr Gly Pro Lys Pro Gly Pro Ser	
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Pro Leu Ser Ala Thr Gln Gly Ala Thr Pro Gln Gln Pro Pro Val Asn	
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Ser Leu Pro Ser Ser His Gly His His Phe Pro Asn Val Ala Ala Pro	
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Thr Gln Thr Ser Arg Pro Lys Thr Pro Asn Arg Ala Ser Pro Arg Pro	
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Tyr Tyr Pro Gln Thr Pro Asn Asn Arg Pro Pro Ser Thr Glu Pro Ser	
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Arg Gly Phe Asp Gln Gln Gly Leu Asn Pro Thr Ile Leu Lys Ala Ile	
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Ser Ser Pro Gly Ser Ser Arg Lys Thr Thr Pro Ser Pro Gly Arg Gln	
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Leu Asn Pro Gln Asn Ser Thr Val Ser Val Ala Ala Val Gly Gly Val	
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Val Glu Asp Asn Lys Glu Ser Leu Asn Val Pro Gln Asp Ser Asp Cys	
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Gln Asn Ser Gln Ser Arg Lys Glu Gln Val Asn Ile Glu Leu Lys Ala	
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gtc cct gcc caa gaa gtt aaa atg gtt gtc cct gaa gat cag tcc aaa	4602
Val Pro Ala Gln Glu Val Lys Met Val Val Pro Glu Asp Gln Ser Lys	
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Lys Asp Gly Gln Pro Ser Asp Pro Asn Lys Leu Pro Ser Val Glu Glu	
1460 1465 1470 1475	
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Asn Lys Asn Leu Val Ser Pro Ala Met Arg Glu Ala Pro Thr Ser Leu	
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Ser Gln Leu Leu Asp Asn Ser Gly Ala Pro Asn Val Thr Ile Lys Pro	
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Pro Gly Leu Thr Asp Leu Glu Val Thr Pro Pro Val Val Ser Gly Glu	
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Asp Leu Lys Lys Ala Ser Val Ile Pro Thr Leu Gln Asp Leu Ser Ser	
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Ser Lys Glu Pro Ser Asn Ser Leu Asn Leu Pro His Ser Asn Glu Leu	
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Cys Ser Ser Leu Val His Pro Glu Leu Ser Glu Val Ser Ser Asn Val	
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Ile Ser Thr Pro Leu Pro Pro Asn Gln Ile Thr Val Phe Val Thr Ser	

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Leu Gln Ser Ala Leu Met Ser Thr Val Val Thr Met Pro Asn Ala Gly				
1620	1625	1630	1635	
agc aag gtt atg gtt tct gag gga cag tca gct gct cag tct aat gcc				5178
Ser Lys Val Met Val Ser Glu Gly Gln Ser Ala Ala Gln Ser Asn Ala				
1636	1641	1646	1651	
cgg cct cag ttc att aca cct gtc ttt atc aat tca tcc tca ata att				5226
Arg Pro Gln Phe Ile Thr Pro Val Phe Ile Asn Ser Ser Ser Ile Ile				
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Gln Val Met Lys Gly Ser Gln Pro Ser Thr Ile Pro Ala Ala Pro Leu				
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Thr Thr Asn Ser Gly Leu Met Pro Pro Ser Val Ala Val Val Gly Pro				
1684	1689	1694	1699	
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Leu His Ile Pro Gln Asn Ile Lys Phe Ser Ser Ala Pro Val Pro Pro				
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Asn Ala Leu Ser Ser Ser Pro Ala Pro Asn Ile Gln Thr Gly Arg Pro				
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Leu Val Leu Ser Ser Arg Ala Thr Pro Val Gln Leu Pro Ser Pro Pro				
1732	1737	1742	1747	
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Cys Thr Ser Ser Pro Val Val Pro Ser His Pro Pro Val Gln Gln Val				
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Lys Glu Leu Asn Pro Asp Glu Ala Ser Pro Gln Val Asn Thr Ser Ala				
1764	1769	1774	1779	
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Asp Gln Asn Thr Leu Pro Ser Ser Gln Ser Thr Thr Met Val Ser Pro				
1780	1785	1790	1795	
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Leu Leu Thr Asn Ser Pro Gly Ser Ser Gly Asn Arg Arg Ser Pro Val				
1796	1801	1806	1811	
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Ser Ser Ser Lys Gly Lys Gly Lys Val Asp Lys Ile Gly Gln Ile Leu				
1812	1817	1822	1827	

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Leu Thr Lys Ala Cys Lys Lys Val Thr Gly Ser Leu Glu Lys Gly Glu	
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Glu Gln Tyr Gly Ala Asp Gly Glu Thr Glu Gly Gln Gly Leu Asp Thr	
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Thr Ala Pro Gly Leu Met Gly Thr Glu Gln Leu Ser Thr Glu Leu Asp	
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Ser Lys Thr Pro Thr Pro Pro Ala Pro Thr Leu Lys Met Thr Ser	
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Ser Pro Val Gly Pro Gly Thr Ala Ser Ala Gly Pro Ser Leu Pro Gly	
1892 1897 1902 1907	
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Gly Ala Leu Pro Thr Ser Val Arg Ser Ile Val Thr Thr Leu Val Pro	
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Ile Ala Ser Glu Ser Leu Ala Gly Gly Leu Val Glu Glu Lys Val Gly	
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Ser His Pro Glu Leu Leu Pro Ser Ile Ala Pro Ser Gln Asn Leu Val	
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Ser Lys Glu Thr Ser Thr Thr Ala Leu Gln Ala Ser Val Ala Arg Pro	
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Glu Leu Glu Val Asn Ala Ala Ile Val Ser Gly Gln Ser Ser Glu Pro	
1988 1993 1998 2003	
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Lys Glu Ile Val Glu Lys Ser Lys Ile Pro Gly Arg Arg Asn Ser Arg	
2004 2009 2014 2019	
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Thr Glu Glu Pro Thr Val Ala Ser Glu Ser Val Glu Asn Gly His Arg	
2020 2025 2030 2035	
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Lys Arg Ser Ser Arg Pro Ala Ser Ala Ser Ser Ser Thr Lys Asp Ile	
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58	63	68	73	
cat gtt gaa gga gta gaa gtg gac tta gag tct att aga aga ata aac				353
His Val Glu Gly Val Glu Val Asp Leu Glu Ser Ile Arg Arg Ile Asn				
74	79	84	89	
aag gcc aaa aat gaa caa gag cac cat gct gga gga gat tcc cag aaa				401
Lys Ala Lys Asn Glu Gln Glu His His Ala Gly Gly Asp Ser Gln Lys				
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gat atc atg cag agg cag tat ctc aca ttt aag cct cag aca ttc acc				449
Asp Ile Met Gln Arg Gln Tyr Leu Thr Phe Lys Pro Gln Thr Phe Thr				
106	111	116	121	
tac cat gat cct gtg ctt cgc cca ggg atc ctc ggt aac ttt gaa ccc				497
Tyr His Asp Pro Val Leu Arg Pro Gly Ile Leu Gly Asn Phe Glu Pro				
122	127	132	137	
aaa gaa cct gag cct cct gga gtg gtt ggt ggc cct ggg aga gaa agc				545
Lys Glu Pro Glu Pro Pro Gly Val Val Gly Gly Pro Gly Arg Glu Ser				
138	143	148	153	
caa gcc att ggt ttt ggg gcc cag aat tta aac aag caa ttc aag cca				593
Gln Ala Ile Gly Phe Gly Ala Gln Asn Leu Asn Lys Gln Phe Lys Pro				
154	159	164	169	
gca ttt aaa gag ttt ggg ttt aac atg gtg gca agt gac atg ttc tca				641
Ala Phe Lys Glu Phe Gly Phe Asn Met Val Ala Ser Asp Met Phe Ser				
170	175	180	185	
ctg gac cgc aac gtc aat gac tta cgc caa gaa gaa tgc aag tat tgg				689
Leu Asp Arg Asn Val Asn Asp Leu Arg Gln Glu Glu Cys Lys Tyr Trp				
186	191	196	201	
cat tat gat gaa aac ttg ctc act tcg agc gtt gtc att gtc ttc cat				737
His Tyr Asp Glu Asn Leu Leu Thr Ser Ser Val Val Ile Val Phe His				
202	207	212	217	
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Asn Glu Gly Trp Ser Thr Leu Met Arg Thr Val His Ser Val Ile Lys				
218	223	228	233	
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Arg Thr Pro Arg Lys Tyr Leu Ala Glu Ile Val Leu Ile Asp Asp Phe				
234	239	244	249	
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Ser Asn Lys Glu His Leu Lys Glu Lys Leu Asp Glu Tyr Ile Lys Leu				
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Trp Asn Gly Leu Val Lys Val Phe Arg Asn Glu Arg Arg Glu Gly Leu				
266	271	276	281	
att caa gca cga agt att ggt gct cag aag gct aaa ctt gga cag gtt				977
Ile Gln Ala Arg Ser Ile Gly Ala Gln Lys Ala Lys Leu Gly Gln Val				
282	287	292	297	

ttg ata tac ctt gat gcc cac tgt gag gtg gca gtt aac tgg tat gca	1025
Leu Ile Tyr Leu Asp Ala His Cys Glu Val Ala Val Asn Trp Tyr Ala	
298 303 308 313	
cca ctt gta gct ccc ata tct aag gac aga acc att tgc act gtg ccg	1073
Pro Leu Val Ala Pro Ile Ser Lys Asp Arg Thr Ile Cys Thr Val Pro	
314 319 324 329	
ctt ata gat gtc ata aat ggc aac aca tat gaa att ata ccc caa ggg	1121
Leu Ile Asp Val Ile Asn Gly Asn Thr Tyr Glu Ile Ile Pro Gln Gly	
330 335 340 345	
ggg ggt gat gaa gat ggg tat gcc cga gga gca tgg gat tgg agt atg	1169
Gly Gly Asp Glu Asp Gly Tyr Ala Arg Gly Ala Trp Asp Trp Ser Met	
346 351 356 361	
ctc tgg aaa cgg gtg cct ctg acc cct caa gag aag aga ctg aga aag	1217
Leu Trp Lys Arg Val Pro Leu Thr Pro Gln Glu Lys Arg Leu Arg Lys	
362 367 372 377	
aca aaa act gaa ccg tat cgg tcc cca gcc atg gct ggg gga tta tgt	1265
Thr Lys Thr Glu Pro Tyr Arg Ser Pro Ala Met Ala Gly Gly Leu Cys	
378 383 388 393	
gcc att gaa cga gag ttc ttc ttt gaa ttg ggt ctc tat gat cca ggt	1313
Ala Ile Glu Arg Glu Phe Phe Phe Glu Leu Gly Leu Tyr Asp Pro Gly	
394 399 404 409	
ctc cag att tgg ggt ggt gaa aac ttt gag atc tca tac aag ata tgg	1361
Leu Gln Ile Trp Gly Gly Glu Asn Phe Glu Ile Ser Tyr Lys Ile Trp	
410 415 420 425	
cag tgt ggt ggc aaa tta tta ttt gtt cct tgt tct cgt gtt gga cat	1409
Gln Cys Gly Gly Lys Leu Leu Phe Val Pro Cys Ser Arg Val Gly His	
426 431 436 441	
atc tac cgt ctt gag ggc tgg caa gga aat cct ccg ccc att tat gtt	1457
Ile Tyr Arg Leu Glu Gly Trp Gln Gly Asn Pro Pro Pro Ile Tyr Val	
442 447 452 457	
ggg tct tct cca act ctg aag aat tat gtt aga gtt gtg gag gtt tgg	1505
Gly Ser Ser Pro Thr Leu Lys Asn Tyr Val Arg Val Val Glu Val Trp	
458 463 468 473	
tgg gat gaa tat aaa gac tac ttc tat gct agt cgt cct gaa tcg cag	1553
Trp Asp Glu Tyr Lys Asp Tyr Phe Tyr Ala Ser Arg Pro Glu Ser Gln	
474 479 484 489	
gca tta cca tat ggg gat ata tcg gag ctg aaa aaa ttt cga gaa gat	1601
Ala Leu Pro Tyr Gly Asp Ile Ser Glu Leu Lys Lys Phe Arg Glu Asp	
490 495 500 505	
cac aac tgc aaa agt ttt aag tgg ttc atg gaa gaa ata gct tat gat	1649
His Asn Cys Lys Ser Phe Lys Trp Phe Met Glu Glu Ile Ala Tyr Asp	
506 511 516 521	

atc acc tca cac tac cct ttg cca ccc aaa aat gtt gac tgg gga gaa	1697
Ile Thr Ser His Tyr Pro Leu Pro Pro Lys Asn Val Asp Trp Gly Glu	
522 527 532 537	
atc aga ggc ttc gaa act gct tac tgc att gat agc atg gga aaa aca	1745
Ile Arg Gly Phe Glu Thr Ala Tyr Cys Ile Asp Ser Met Gly Lys Thr	
538 543 548 553	
aat gga ggc ttt gtt gaa cta gga ccc tgc cac agg atg gga ggg aat	1793
Asn Gly Gly Phe Val Glu Leu Gly Pro Cys His Arg Met Gly Gly Asn	
554 559 564 569	
cag ctt ttc aga atc aat gaa gca aat caa ctc atg cag tat gac cag	1841
Gln Leu Phe Arg Ile Asn Glu Ala Asn Gln Leu Met Gln Tyr Asp Gln	
570 575 580 585	
tgt ttg aca aag gga gct gat gga tca aaa gtt atg att aca cac tgt	1889
Cys Leu Thr Lys Gly Ala Asp Gly Ser Lys Val Met Ile Thr His Cys	
586 591 596 601	
aat cta aat gaa ttt aag gaa tgg cag tac ttc aag aac ctg cac aga	1937
Asn Leu Asn Glu Phe Lys Glu Trp Gln Tyr Phe Lys Asn Leu His Arg	
602 607 612 617	
ttt act cat att cct tca gga aag tgt tta gat cgc tca gag gtc ctg	1985
Phe Thr His Ile Pro Ser Gly Lys Cys Leu Asp Arg Ser Glu Val Leu	
618 623 628 633	
cat caa gta ttc atc tcc aat tgt gac tcc agt aaa acg act caa aaa	2033
His Gln Val Phe Ile Ser Asn Cys Asp Ser Ser Lys Thr Thr Gln Lys	
634 639 644 649	
tgg gaa atg aat aac atc cat agt gtt tag a gagaaaaaa taaaccaata	2084
Trp Glu Met Asn Asn Ile His Ser Val *	
650 655	
acctacctac tgacaagtaa atttatacag gactgaaaac cgcttgaaac ctgctgcaac	2144
tattgttatt aactotgtat agctccaaac ctggaacctc ctgatcagtt tgaaggacat	2204
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Glu Ile Leu Asn Leu Thr Trp Trp Pro Leu Phe Arg Asp Val Ser Phe	
186 191 196 201	
tac att gtt gac ttg atc atg ctg atc ata ttt ttc ctg gat aat gtc	1035
Tyr Ile Val Asp Leu Ile Met Leu Ile Ile Phe Phe Leu Asp Asn Val	
202 207 212 217	
atc atg tgg tgg gaa agc ttg ctt ctc tta aca gct tat ttt tgc tat	1083
Ile Met Trp Trp Glu Ser Leu Leu Leu Leu Thr Ala Tyr Phe Cys Tyr	
218 223 228 233	
gtg gtt ttc atg aaa ttc aac gtc caa gta gaa aaa tgg gtg aag caa	1131
Val Val Phe Met Lys Phe Asn Val Gln Val Glu Lys Trp Val Lys Gln	
234 239 244 249	
atg ata aac cgc aat aag gtc gtc aag gtg aca gca cca gaa gcc caa	1179
Met Ile Asn Arg Asn Lys Val Val Lys Val Thr Ala Pro Glu Ala Gln	
250 255 260 265	
gca aag cca tct gca gcc agg gac aag gat gaa cca act cta ccg gct	1227
Ala Lys Pro Ser Ala Ala Arg Asp Lys Asp Glu Pro Thr Leu Pro Ala	
266 271 276 281	
aag ccg cgt ctc cag cga ggt gga agc tct gcc tcc ctc cac aac agt	1275
Lys Pro Arg Leu Gln Arg Gly Gly Ser Ser Ala Ser Leu His Asn Ser	
282 287 292 297	
ctc atg agg aat agc atc ttc caa ctc atg ata cac acc ctt gac cca	1323
Leu Met Arg Asn Ser Ile Phe Gln Leu Met Ile His Thr Leu Asp Pro	
298 303 308 313	
ctc gcc gaa gaa ctt gga tca tat gga aaa cta aaa tat tat gac aca	1371
Leu Ala Glu Glu Leu Gly Ser Tyr Gly Lys Leu Lys Tyr Tyr Asp Thr	
314 319 324 329	
atg act gaa gaa ggg agg ttc aga gaa aag gct tca att ctc cac aag	1419
Met Thr Glu Glu Gly Arg Phe Arg Glu Lys Ala Ser Ile Leu His Lys	
330 335 340 345	
atc gcc aag aag aaa tgt cat gtg gat gag aac gag cgg cag aat ggg	1467
Ile Ala Lys Lys Lys Cys His Val Asp Glu Asn Glu Arg Gln Asn Gly	
346 351 356 361	
gct gcc aac cac gtg gaa aaa att gag ctt cca aac agc acc agc aca	1515
Ala Ala Asn His Val Glu Lys Ile Glu Leu Pro Asn Ser Thr Ser Thr	
362 367 372 377	
gat gtt gaa atg aca cca tcc agt gat gct tca gaa cct gta caa aat	1563
Asp Val Glu Met Thr Pro Ser Ser Asp Ala Ser Glu Pro Val Gln Asn	
378 383 388 393	
gga aat ctc tcc cac aac att gaa ggt gca gaa gcc cag acc gct gat	1611
Gly Asn Leu Ser His Asn Ile Glu Gly Ala Glu Ala Gln Thr Ala Asp	

394	399	404	409	
gag gag gag gac cag cct ctc agc ctt gcc tgg cct tct gaa acc cgc				1659
Glu Glu Glu Asp Gln Pro Leu Ser Leu Ala Trp Pro Ser Glu Thr Arg				
410	415	420	425	
aag caa gtc acg ttt ctg att gtt ttc ccc ata gtg ttt cct ctc tgg				1707
Lys Gln Val Thr Phe Leu Ile Val Phe Pro Ile Val Phe Pro Leu Trp				
426	431	436	441	
att acg tta cct gac gtt cgc aaa cct tca tgc agg aag ttt ttt ccc				1755
Ile Thr Leu Pro Asp Val Arg Lys Pro Ser Ser Arg Lys Phe Phe Pro				
442	447	452	457	
atc acg ttc ttt ggc tcc att acc tgg att gca gta ttc tct tac ttg				1803
Ile Thr Phe Phe Gly Ser Ile Thr Trp Ile Ala Val Phe Ser Tyr Leu				
458	463	468	473	
atg gtc tgg tgg gcg cac cag gtt gga gag aca att ggc atc agt gaa				1851
Met Val Trp Trp Ala His Gln Val Gly Glu Thr Ile Gly Ile Ser Glu				
474	479	484	489	
gag att atg ggc ctg acc atc ttg gct gct ggg acc tcc atc cct gat				1899
Glu Ile Met Gly Leu Thr Ile Leu Ala Ala Gly Thr Ser Ile Pro Asp				
490	495	500	505	
ctt atc acc agt gtc ata gtg gcc cgg aag ggg cta ggg gac atg gct				1947
Leu Ile Thr Ser Val Ile Val Ala Arg Lys Gly Leu Gly Asp Met Ala				
506	511	516	521	
gtg tcc agc tct gtt gga agc aac att ttt gac atc act gta ggg ctc				1995
Val Ser Ser Ser Val Gly Ser Asn Ile Phe Asp Ile Thr Val Gly Leu				
522	527	532	537	
cca ctg ccc tgg ctc ctg tac acc gtc att cac aga ttc cag cca gtg				2043
Pro Leu Pro Trp Leu Leu Tyr Thr Val Ile His Arg Phe Gln Pro Val				
538	543	548	553	
gct gtc agc agc aat ggc ctt ttc tgt gcc atc gtc ctt ctc ttc atc				2091
Ala Val Ser Ser Asn Gly Leu Phe Cys Ala Ile Val Leu Leu Phe Ile				
554	559	564	569	
atg ctg ctc ttc gtc atc ctc tct atc gcc ctc tgc aag tgg cga atg				2139
Met Leu Leu Phe Val Ile Leu Ser Ile Ala Leu Cys Lys Trp Arg Met				
570	575	580	585	
aac aaa atc ctg ggc ttc atc atg ttt ggc ctc tac ttt gtg ttc ctg				2187
Asn Lys Ile Leu Gly Phe Ile Met Phe Gly Leu Tyr Phe Val Phe Leu				
586	591	596	601	
gtg gtg agc gtt ctc cta gaa gac aga att ctt aca tgc ccc gtc tcc				2235
Val Val Ser Val Leu Leu Glu Asp Arg Ile Leu Thr Cys Pro Val Ser				
602	607	612	617	
atc tag caggaaaagc catatcttgc accagcagca tgaatggtcc ctccacactc				2291
Ile *				
618				

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 agtgtccctc cttggtgaat ttgaggagag atggattcac actgggcccc ttcaattcac 2411
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 tctgtttcct catctatcaa tgaagatgat actatgaacc caataaggct gttaaaacag 180
 gttttttatt acctaccacg gcgggctgta catctctgac gtacagaagg aggacgcct 240
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 ttgtgaggtc accaacacct tcggttcggc agaggccaca ggcacctc atg gtc 595
 Met Val
 1
 att gat ccc ctt cat gtg acc ctg aca cca aag aag ctg aag acc ggc 643
 Ile Asp Pro Leu His Val Thr Leu Thr Pro Lys Lys Leu Lys Thr Gly
 3 8 13 18
 att ggc agc acg gtc atc ctc tcc tgt gcc ctg acg ggc tcc cca gag 691
 Ile Gly Ser Thr Val Ile Leu Ser Cys Ala Leu Thr Gly Ser Pro Glu
 19 24 29 34
 ttc acc atc cgc tgg tat cgc aac acg gag ctg gtg ctg cct gac gag 739
 Phe Thr Ile Arg Trp Tyr Arg Asn Thr Glu Leu Val Leu Pro Asp Glu
 35 40 45 50
 gcc atc tcc atc cgc ggg ctc agc aac gag acg ctg ctc atc acc tcg 787

Ala Ile Ser Ile Arg Gly Leu Ser Asn Glu Thr Leu Leu Ile Thr Ser	
51 56 61 66	
gcc cag aag agc cat tcc ggg gcc tac cag tgc ttc gct acc cgc aag	835
Ala Gln Lys Ser His Ser Gly Ala Tyr Gln Cys Phe Ala Thr Arg Lys	
67 72 77 82	
gcc cag acc gcc cag gac ttt gcc atc att gca ctt gag gat ggc acg	883
Ala Gln Thr Ala Gln Asp Phe Ala Ile Ile Ala Leu Glu Asp Gly Thr	
83 88 93 98	
ccc cgc atc gtc tcg tcc ttc agc gag aag gtg gtc aac ccc ggg gag	931
Pro Arg Ile Val Ser Ser Phe Ser Glu Lys Val Val Asn Pro Gly Glu	
99 104 109 114	
cag ttc tca ctg atg tgt gcg gcc aag ggc gcc ccg ccc ccc acg gtc	979
Gln Phe Ser Leu Met Cys Ala Ala Lys Gly Ala Pro Pro Pro Thr Val	
115 120 125 130	
acc tgg gcc ctc gac gat gag ccc atc gtg cgg gat ggc agc cac cgc	1027
Thr Trp Ala Leu Asp Asp Glu Pro Ile Val Arg Asp Gly Ser His Arg	
131 136 141 146	
acc aac cag tac acc atg tcg gac ggc acc acc atc agc cac atg aac	1075
Thr Asn Gln Tyr Thr Met Ser Asp Gly Thr Thr Ile Ser His Met Asn	
147 152 157 162	
gtc aca ggc ccc cag atc cgc gac ggg ggc gtg tac cgg tgc aca gcg	1123
Val Thr Gly Pro Gln Ile Arg Asp Gly Gly Val Tyr Arg Cys Thr Ala	
163 168 173 178	
cgg aac ttg gtg ggc agt gct gaa tat cag gcg cga ata aac gta aga	1171
Arg Asn Leu Val Gly Ser Ala Glu Tyr Gln Ala Arg Ile Asn Val Arg	
179 184 189 194	
ggc cca ccc agc atc cgg gct atg cgg aac atc aca gca gtc gcc ggg	1219
Gly Pro Pro Ser Ile Arg Ala Met Arg Asn Ile Thr Ala Val Ala Gly	
195 200 205 210	
cgg gac acc ctt atc aac tgc agg gtc atc ggc tat ccc tac tac tcc	1267
Arg Asp Thr Leu Ile Asn Cys Arg Val Ile Gly Tyr Pro Tyr Tyr Ser	
211 216 221 226	
atc aag tgg tac aag gat gcc ctg ctg ctg cca gac aac cac cgc cag	1315
Ile Lys Trp Tyr Lys Asp Ala Leu Leu Leu Pro Asp Asn His Arg Gln	
227 232 237 242	
gtg gtg ttt gag aat ggg acc ctc aag ctg act gac gtg cag aag ggc	1363
Val Val Phe Glu Asn Gly Thr Leu Lys Leu Thr Asp Val Gln Lys Gly	
243 248 253 258	
atg gat gag ggg gag tac ctg tgc agt gtc ctc atc cag ccc cag ctc	1411
Met Asp Glu Gly Glu Tyr Leu Cys Ser Val Leu Ile Gln Pro Gln Leu	
259 264 269 274	
tcc atc agc cag agc gtt cac gta gcc gtc aaa gtg ccc cct ctg atc	1459
Ser Ile Ser Gln Ser Val His Val Ala Val Lys Val Pro Pro Leu Ile	

275	280	285	290	
cag ccc ttc gaa ttc	cca ccc gcc tcc atc	ggc cag ctg ctc tac att		1507
Gln Pro Phe Glu Phe	Pro Pro Ala Ser Ile	Gly Gln Leu Leu Tyr Ile		
291	296	301	306	
ccc tgt gtg gtg tcc	tcg ggg gac atg ccc	atc cgt atc acc tgg agg		1555
Pro Cys Val Val Ser	Ser Gly Asp Met Pro	Ile Arg Ile Thr Trp Arg		
307	312	317	322	
aag gac gga cag gtg	atc atc tca ggc tcg	ggc gtg acc atc gag agc		1603
Lys Asp Gly Gln Val	Ile Ile Ser Gly Ser	Gly Val Thr Ile Glu Ser		
323	328	333	338	
aag gaa ttc atg agc	tcc ctg cag atc tct	agc gtc tcc ctc aag cac		1651
Lys Glu Phe Met Ser	Ser Leu Gln Ile Ser	Ser Val Ser Leu Lys His		
339	344	349	354	
aac ggc aac tat aca	tgc atc gcc agc aac	gca gcc gcc acc gtg agc		1699
Asn Gly Asn Tyr Thr	Cys Ile Ala Ser Asn	Ala Ala Ala Thr Val Ser		
355	360	365	370	
cgg gag cgc cag ctc	atc gtg cgt gtg ccc	cct cga ttt gtg gtg caa		1747
Arg Glu Arg Gln Leu	Ile Val Arg Val Pro	Pro Arg Phe Val Val Gln		
371	376	381	386	
ccc aac aac cag gat	ggc atc tac ggc aaa	gct ggt gtg ctc aac tgc		1795
Pro Asn Asn Gln Asp	Gly Ile Tyr Gly Lys	Ala Gly Val Leu Asn Cys		
387	392	397	402	
tcg gtg gac ggc tac	ccc cca ccc aag gtc	atg tgg aag cat gcc aag		1843
Ser Val Asp Gly Tyr	Pro Pro Pro Lys Val	Met Trp Lys His Ala Lys		
403	408	413	418	
ggg agc ggg aac ccc	cag cag tac cac cct	gtg ccc ctc act ggc cgc		1891
Gly Ser Gly Asn Pro	Gln Gln Tyr His Pro	Val Pro Leu Thr Gly Arg		
419	424	429	434	
atc cag atc ctg ccc	aac agc tcg ctg ctg	atc cgc cac gtc cta gaa		1939
Ile Gln Ile Leu Pro	Asn Ser Ser Leu Leu	Ile Arg His Val Leu Glu		
435	440	445	450	
gag gac atc ggc tac	tac ctc tgc cag gcc	agc aac ggc gta ggc acc		1987
Glu Asp Ile Gly Tyr	Tyr Leu Cys Gln Ala	Ser Asn Gly Val Gly Thr		
451	456	461	466	
gac atc agc aag tcc	atg ttc ctc aca gtc	aag atc ccg gcc atg atc		2035
Asp Ile Ser Lys Ser	Met Phe Leu Thr Val	Lys Ile Pro Ala Met Ile		
467	472	477	482	
act tcc cac ccc aac	acc acc atc gcc atc	aag ggc cat gcg aag gag		2083
Thr Ser His Pro Asn	Thr Thr Ile Ala Ile	Lys Gly His Ala Lys Glu		
483	488	493	498	
cta aac tgc acg gca	cgg ggt gag cgg ccc	atc atc atc cgc tgg gag		2131
Leu Asn Cys Thr Ala	Arg Gly Glu Arg Pro	Ile Ile Ile Arg Trp Glu		
499	504	509	514	

aag ggg gac aca gtc atc gac cct gac cgc gtc atg cgg tat gcc atc	2179
Lys Gly Asp Thr Val Ile Asp Pro Asp Arg Val Met Arg Tyr Ala Ile	
515 520 525 530	
gcc acc aag gac aac ggc gac gag gtc gtc tcc aca ctg aag ctc aag	2227
Ala Thr Lys Asp Asn Gly Asp Glu Val Val Ser Thr Leu Lys Leu Lys	
531 536 541 546	
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Pro Ala Asp Arg Gly Asp Ser Val Phe Phe Ser Cys His Ala Ile Asn	
547 552 557 562	
tcg tat ggg gag gac cgg ggc ttg atc caa ctc act gtg caa gag ccc	2323
Ser Tyr Gly Glu Asp Arg Gly Leu Ile Gln Leu Thr Val Gln Glu Pro	
563 568 573 578	
ccc gac ccc cca gag ctg gag atc cgg gag gtg aag gcc cgg agc atg	2371
Pro Asp Pro Pro Glu Leu Glu Ile Arg Glu Val Lys Ala Arg Ser Met	
579 584 589 594	
aac ctg cgc tgg acc cag cga ttc gac ggg aac agc atc atc acg ggc	2419
Asn Leu Arg Trp Thr Gln Arg Phe Asp Gly Asn Ser Ile Ile Thr Gly	
595 600 605 610	
ttc gac att gaa tac aag aac aaa tca gat tcc tgg gac ttc aag cag	2467
Phe Asp Ile Glu Tyr Lys Asn Lys Ser Asp Ser Trp Asp Phe Lys Gln	
611 616 621 626	
tcc aca cgc aac atc tcc ccc acc atc aac cag gcc aac att gtg gac	2515
Ser Thr Arg Asn Ile Ser Pro Thr Ile Asn Gln Ala Asn Ile Val Asp	
627 632 637 642	
ttg cac ccg gca tct gtg tac agc atc cgc atg tac tct ttc aac aag	2563
Leu His Pro Ala Ser Val Tyr Ser Ile Arg Met Tyr Ser Phe Asn Lys	
643 648 653 658	
att ggc cgc agt gaa cca agc aag gag ctc acc atc agc act gag gag	2611
Ile Gly Arg Ser Glu Pro Ser Lys Glu Leu Thr Ile Ser Thr Glu Glu	
659 664 669 674	
gcc gct ccc gat ggg ccc ccc atg gat gtt acc ttg cag cca gtg acc	2659
Ala Ala Pro Asp Gly Pro Pro Met Asp Val Thr Leu Gln Pro Val Thr	
675 680 685 690	
tca cag agc atc cag gtg acc tgg aag gca ccc aag aag gag ctg cag	2707
Ser Gln Ser Ile Gln Val Thr Trp Lys Ala Pro Lys Lys Glu Leu Gln	
691 696 701 706	
aac ggt gtc atc cgg ggc tac cag att ggc tac aga gag aac agc ccc	2755
Asn Gly Val Ile Arg Gly Tyr Gln Ile Gly Tyr Arg Glu Asn Ser Pro	
707 712 717 722	
ggc agc aac ggg cag tac agc atc gtg gag atg aag gcc acg ggg gac	2803
Gly Ser Asn Gly Gln Tyr Ser Ile Val Glu Met Lys Ala Thr Gly Asp	
723 728 733 738	

agc gag gtc tac acc ctg gac aac ctc aag aag ttc gcc cag tat ggg	2851
Ser Glu Val Tyr Thr Leu Asp Asn Leu Lys Lys Phe Ala Gln Tyr Gly	
739 744 749 754	
gtg gtg gtc caa gcc ttc aat cgg gct ggc acg ggg ccc tct tcc agc	2899
Val Val Val Gln Ala Phe Asn Arg Ala Gly Thr Gly Pro Ser Ser Ser	
755 760 765 770	
gag atc aat gcc acc act ctg gag gat gtg ccc agc cag ccc cct gag	2947
Glu Ile Asn Ala Thr Thr Leu Glu Asp Val Pro Ser Gln Pro Pro Glu	
771 776 781 786	
aac gtc cgg gcc ctg tcc atc act tct gac gtg gcc gtc atc tcc tgg	2995
Asn Val Arg Ala Leu Ser Ile Thr Ser Asp Val Ala Val Ile Ser Trp	
787 792 797 802	
tca gag ccc ccg cgc agc acc ctc aat ggc gtc ctc aaa ggc tat cgg	3043
Ser Glu Pro Pro Arg Ser Thr Leu Asn Gly Val Leu Lys Gly Tyr Arg	
803 808 813 818	
gtc atc ttc tgg tcc ctc tat gtt gat ggg gag tgg ggc gag atg cag	3091
Val Ile Phe Trp Ser Leu Tyr Val Asp Gly Glu Trp Gly Glu Met Gln	
819 824 829 834	
aac atc acc acc acg cgg gag cgg gtg gag ctg cgg ggc atg gag aag	3139
Asn Ile Thr Thr Thr Arg Glu Arg Val Glu Leu Arg Gly Met Glu Lys	
835 840 845 850	
ttc acc aac tac agc gtc cag gtg ctg gcc tac acc cag gct ggg gac	3187
Phe Thr Asn Tyr Ser Val Gln Val Leu Ala Tyr Thr Gln Ala Gly Asp	
851 856 861 866	
ggc gta cgc agc agt gtg ctc tac atc cag acc aag gag gac gtt cca	3235
Gly Val Arg Ser Ser Val Leu Tyr Ile Gln Thr Lys Glu Asp Val Pro	
867 872 877 882	
ggt ccc cct gct ggc atc aaa gct gtc cct tca tca gct agc agt gtg	3283
Gly Pro Pro Ala Gly Ile Lys Ala Val Pro Ser Ser Ala Ser Ser Val	
883 888 893 898	
gtt gtg tct tgg ctc ccc cct acc aag ccc aac ggg gtg atc cgc aag	3331
Val Val Ser Trp Leu Pro Pro Thr Lys Pro Asn Gly Val Ile Arg Lys	
899 904 909 914	
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Tyr Thr Ile Phe Cys Ser Ser Pro Gly Ser Gly Gln Pro Ala Pro Ser	
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Glu Tyr Glu Thr Ser Pro Glu Gln Leu Phe Tyr Arg Ile Ala His Leu	
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Gly 963	Arg	Gly	Asn	Ser	Ser 968	Glu	Lys	Val	Thr	Ile 973	Glu	Pro	Ala	Gly	Lys 978	
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Ala 979	Pro	Ala	Lys	Ile	Ile	Ser	Phe	Gly	Gly	Thr	Val	Thr	Thr	Pro	Trp 994	
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Met 995	Lys	Asp	Val	Arg	Leu	Pro	Cys	Asn	Ser	Val	Gly	Asp	Pro	Ala	Pro 1010	
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Pro 1075	Asp	Gln	Pro	Arg	Leu	Thr	Val	Ser	Lys	Thr	Ser	Ala	Ser	Ser	Ile 1090	
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Leu Arg Ala Asn Ser Ser Gly Glu Val Phe Leu Thr Glu Leu Arg Glu				
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Ile Pro Pro Ile Lys Ser Ala Gln Gly Glu Gly Asp Asp Val Lys Lys				
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Leu Phe Thr Ile Gly Cys Pro Val Ile Leu Ala Thr Leu Gly Val Ala				
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Leu His His Pro Thr Leu Ile Gln Ser Thr Gly Pro Leu Ile Asp Met				
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Pro Met Asn Ala Thr	Ser Ala Phe Gly Pro Asn Leu Arg Tyr Ile Val	
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Glu Tyr Glu Gly Glu Tyr Gln Cys Phe Ala Arg Asn Lys Phe Gly Thr	
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Ala Leu Ser Asn Arg Ile Arg Leu Gln Val Ser Lys Ser Pro Leu Trp	
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Pro Lys Glu Asn Leu Asp Pro Val Val Val Gln Glu Gly Ala Pro Leu	
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Thr Leu Gln Cys Asn Pro Pro Pro Gly Leu Pro Ser Pro Val Ile Phe	
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Trp Met Ser Ser Ser Met Glu Pro Ile Thr Gln Asp Lys Arg Val Ser	
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Gln Gly His Asn Gly Asp Leu Tyr Phe Ser Asn Val Met Leu Gln Asp	
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Met Gln Thr Asp Tyr Ser Cys Asn Ala Arg Phe His Phe Thr His Thr	
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Leu Pro Ser Asp Lys Ala Lys Phe Glu Asn Phe Asn Lys Ala Leu Arg				
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Ala Ala Pro Tyr Trp Leu Asp Glu Pro Lys Asn Leu Ile Leu Ala Pro				
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Gly Glu Asp Gly Arg Leu Val Cys Arg Ala Asn Gly Asn Pro Lys Pro				
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Thr Val Gln Trp Met Val Asn Gly Glu Pro Leu Gln Ser Ala Pro Pro				
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Asn Pro Asn Arg Glu Val Ala Gly Asp Thr Ile Ile Phe Arg Asp Thr				
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Gln Ile Ser Ser Arg Ala Val Tyr Gln Cys Asn Thr Ser Asn Glu His				
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Gly Tyr Leu Leu Ala Asn Ala Phe Val Ser Val Leu Asp Val Pro Pro				
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Tyr Ala Thr Asn Ser Asp Asn Ala Asn Ala Gln Gln Lys Thr Ser Val	
424 429 434 439	
atc cgt gtg aac cgc ttt aac agc acc gag tac cag gtt gtc acc cgg	1458
Ile Arg Val Asn Arg Phe Asn Ser Thr Glu Tyr Gln Val Val Thr Arg	
440 445 450 455	
gtg gac aag ggt ggt gcc ctc cac atc tac cac cag agg cgt cag ccc	1506
Val Asp Lys Gly Gly Ala Leu His Ile Tyr His Gln Arg Arg Gln Pro	
456 461 466 471	
cga gtg agg agc cat gcc tgt gaa aac gac cag tat ggg aag ccg ggt	1554
Arg Val Arg Ser His Ala Cys Glu Asn Asp Gln Tyr Gly Lys Pro Gly	
472 477 482 487	
ggc tgc tct gac atc tgc ctg ctg gcc aac agc cac aag gcg cgg acc	1602
Gly Cys Ser Asp Ile Cys Leu Leu Ala Asn Ser His Lys Ala Arg Thr	

488	493	498	503	
tgc cgc tgc cgt tcc	ggc ttc agc ctg ggc	agt gac ggg aag tca	tgc	1650
Cys Arg Cys Arg Ser	Gly Phe Ser Leu Gly	Ser Asp Gly Lys Ser	Cys	
504	509	514	519	
aag aag ccg gag cat	gag ctg ttc ctc gtg	tat ggc aag ggc cgg	cca	1698
Lys Lys Pro Glu His	Glu Leu Phe Leu Val	Tyr Gly Lys Gly Arg	Pro	
520	525	530	535	
ggc atc atc cgg ggc	atg gat atg ggg gcc	aag gtc ccg gat gag	cac	1746
Gly Ile Ile Arg Gly	Met Asp Met Gly Ala	Lys Val Pro Asp Glu	His	
536	541	546	551	
atg atc ccc att gaa	aac ctc atg aac ccc	cga gcc ctg gac ttc	cac	1794
Met Ile Pro Ile Glu	Asn Leu Met Asn Pro	Arg Ala Leu Asp Phe	His	
552	557	562	567	
gct gag acc ggc ttc	atc tac ttt gcc gac	acc acc agc tac ctc	att	1842
Ala Glu Thr Gly Phe	Ile Tyr Phe Ala Asp	Thr Thr Ser Tyr Leu	Ile	
568	573	578	583	
ggc cgc cag aag att	gat ggc act gag cgg	gag acc atc ctg aag	gac	1890
Gly Arg Gln Lys Ile	Asp Gly Thr Glu Arg	Glu Thr Ile Leu Lys	Asp	
584	589	594	599	
ggc atc cac aat gtg	gag ggt gtg gcc gtg	gac tgg atg gga gac	aat	1938
Gly Ile His Asn Val	Glu Gly Val Ala Val	Asp Trp Met Gly Asp	Asn	
600	605	610	615	
ctg tac tgg acg gac	gat ggg ccc aaa aag	aca atc agc gtg gcc	agg	1986
Leu Tyr Trp Thr Asp	Asp Gly Pro Lys Lys	Thr Ile Ser Val Ala	Arg	
616	621	626	631	
ctg gag aaa gct gct	cag acc cgc aag act	tta atc gag ggc aaa	atg	2034
Leu Glu Lys Ala Ala	Gln Thr Arg Lys Thr	Leu Ile Glu Gly Lys	Met	
632	637	642	647	
aca cac ccc agg gct	att gtg gtg gat cca	ctc aat ggg tgg atg	tac	2082
Thr His Pro Arg Ala	Ile Val Val Asp Pro	Leu Asn Gly Trp Met	Tyr	
648	653	658	663	
tgg aca gac tgg gag	gag gac ccc aag gac	agt cgg cgt ggg cgg	ctg	2130
Trp Thr Asp Trp Glu	Glu Asp Pro Lys Asp	Ser Arg Arg Gly Arg	Leu	
664	669	674	679	
gag agg gcg tgg atg	gat ggc tca cac cga	gac atc ttt gtc acc	tcc	2178
Glu Arg Ala Trp Met	Asp Gly Ser His Arg	Asp Ile Phe Val Thr	Ser	
680	685	690	695	
aag aca gtg ctt tgg	ccc aat ggg cta agc	ctg gac atc ccg gct	ggg	2226
Lys Thr Val Leu Trp	Pro Asn Gly Leu Ser	Leu Asp Ile Pro Ala	Gly	
696	701	706	711	
cgc ctc tac tgg gtg	gat gcc ttc tac gac	cgc atc gag acg ata	ctg	2274
Arg Leu Tyr Trp Val	Asp Ala Phe Tyr Asp	Arg Ile Glu Thr Ile	Leu	
712	717	722	727	

ctc aat ggc aca gac cgg aag att gtg tat gaa ggt cct gag ctg aac	2322
Leu Asn Gly Thr Asp Arg Lys Ile Val Tyr Glu Gly Pro Glu Leu Asn	
728 733 738 743	
cac gcc ttt ggc ctg tgt cac cat ggc aac tac ctc ttc tgg act gag	2370
His Ala Phe Gly Leu Cys His His Gly Asn Tyr Leu Phe Trp Thr Glu	
744 749 754 759	
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Tyr Arg Ser Gly Ser Val Tyr Arg Leu Glu Arg Gly Val Gly Gly Ala	
760 765 770 775	
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Pro Pro Thr Val Thr Leu Leu Arg Ser Glu Pro Ala Pro His Leu *	
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aaaa 14530

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<213> Homo sapiens

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ccaaacccaa aaaaagagat ctctcgagga tccgaattcg cggccgcgtc gacgcgggtg 120
ccgcctctaa agagagcaat cactacactt atg gct ggg att ttg cgc tta 171
Met Ala Gly Ile Leu Arg Leu
1 5
gta gtt caa tgg ccc cca ggc aga cta cag acc gtg aca aaa ggt gtg 219
Val Val Gln Trp Pro Pro Gly Arg Leu Gln Thr Val Thr Lys Gly Val
8 13 18 23
gag tct ctt att tgt aca gat tgg att cgt cac aaa ttc acc aga tca 267
Glu Ser Leu Ile Cys Thr Asp Trp Ile Arg His Lys Phe Thr Arg Ser
24 29 34 39
aga att cca gaa aaa gtg ttt cag gcc tca cct gaa gat cat gaa aaa 315
Arg Ile Pro Glu Lys Val Phe Gln Ala Ser Pro Glu Asp His Glu Lys
40 45 50 55
tac ggt ggg gat cca cag aac cct cat aaa ctg cat att gtt acc aga 363
Tyr Gly Gly Asp Pro Gln Asn Pro His Lys Leu His Ile Val Thr Arg

56	61	66	71	
ata aaa agt aca aga aga cgt cca tat tgg gaa aaa gat ata ata aag				411
Ile Lys Ser Thr Arg Arg Arg Pro Tyr Trp Glu Lys Asp Ile Ile Lys				
72	77	82	87	
atg ctt gga tta gaa aaa gca cat acc cct caa gtt cac aag aat atc				459
Met Leu Gly Leu Glu Lys Ala His Thr Pro Gln Val His Lys Asn Ile				
88	93	98	103	
cct tca gtg aat gca aaa ttg aaa gta gtt aag cat ttg ata aga atc				507
Pro Ser Val Asn Ala Lys Leu Lys Val Val Lys His Leu Ile Arg Ile				
104	109	114	119	
aag ccc ttg aag ttg cca caa gga ctt cca aca gag gag aac atg tct				555
Lys Pro Leu Lys Leu Pro Gln Gly Leu Pro Thr Glu Glu Asn Met Ser				
120	125	130	135	
aac acg tgc ctc aaa agc act ggg gag tta gta gtg cag tgg cat ctg				603
Asn Thr Cys Leu Lys Ser Thr Gly Glu Leu Val Val Gln Trp His Leu				
136	141	146	151	
aaa cct gtg gag cag aaa gca cat gag tcc taa tgccccag cagcttccga				654
Lys Pro Val Glu Gln Lys Ala His Glu Ser *				
152	157	162		
ttggaaaatg caaattgttt ttatttaaag atgatacctg gaggggtggg gagaagtaag				714
aattgtaagg gaggttcagt agtggggaat tctgtgacag ctgattgaag atgatgatga				774
agaacctctg cattctagtt accctttgct tcccttcacc tcttgtaaaa tttggcttgg				834
caacaatgac attgtcatgc ttattgtccc aatatccatc ctgtcgtaga tcttaatggt				894
tttgatcggt gcgttaaagt ggaagtgcc cccacagtga aaccagatcc cattaataaa				954
taagcttaaa ggcaaaaaaa aaaaa				979

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Met Pro Glu Glu Lys Asp Cys Gly Gly Gly Asp Ala	
1 5 10	

ctc tcc aat ggc atc aag aaa cac aga aca agt ttg cct tct cct atg	157
Leu Ser Asn Gly Ile Lys Lys His Arg Thr Ser Leu Pro Ser Pro Met	
13 18 23 28	
ttt tcc aga aat gac ttc agt atc tgg agc atc ctc aga aaa tgt att	205
Phe Ser Arg Asn Asp Phe Ser Ile Trp Ser Ile Leu Arg Lys Cys Ile	
29 34 39 44	
gga atg gaa cta tcc aag atc acg atg cca gtt ata ttt aat gag cct	253
Gly Met Glu Leu Ser Lys Ile Thr Met Pro Val Ile Phe Asn Glu Pro	
45 50 55 60	
ctg agc ttc cta cag cgc cta act gaa tac atg gag cat act tac ctc	301
Leu Ser Phe Leu Gln Arg Leu Thr Glu Tyr Met Glu His Thr Tyr Leu	
61 66 71 76	
atc cac aag gcc agt tca ctc tct gat cct gtg gaa agg atg cag tgt	349
Ile His Lys Ala Ser Ser Leu Ser Asp Pro Val Glu Arg Met Gln Cys	
77 82 87 92	
gta gct gcg ttt gct gta tct gct gtt gct tct cag tgg gaa cgg act	397
Val Ala Ala Phe Ala Val Ser Ala Val Ala Ser Gln Trp Glu Arg Thr	
93 98 103 108	
gga aaa cct ttc aac cca ctg ctg gga gag act tat gaa tta gtg cga	445
Gly Lys Pro Phe Asn Pro Leu Leu Gly Glu Thr Tyr Glu Leu Val Arg	
109 114 119 124	
gat gac ctt gga ttt aga ctc atc tcc gaa cag gtc agc cat cac cca	493
Asp Asp Leu Gly Phe Arg Leu Ile Ser Glu Gln Val Ser His His Pro	
125 130 135 140	
cca atc agt gca ttt cat gct gaa gga tta aac aat gac ttc atc ttt	541
Pro Ile Ser Ala Phe His Ala Glu Gly Leu Asn Asn Asp Phe Ile Phe	
141 146 151 156	
cat ggc tct atc tat ccc aaa ctg aaa ttc tgg ggg aag agt gta gaa	589
His Gly Ser Ile Tyr Pro Lys Leu Lys Phe Trp Gly Lys Ser Val Glu	
157 162 167 172	
gca gaa ccc aaa gga acc atc acc ttg gag ctc ctt gaa cac aat gag	637
Ala Glu Pro Lys Gly Thr Ile Thr Leu Glu Leu Leu Glu His Asn Glu	
173 178 183 188	
gca tat aca tgg aca aat ccc acc tgc tgt gtg cat aat atc att gtg	685
Ala Tyr Thr Trp Thr Asn Pro Thr Cys Cys Val His Asn Ile Ile Val	
189 194 199 204	
ggg aaa ctg tgg atc gaa cag tat ggc aat gtg gaa att ata aac cac	733
Gly Lys Leu Trp Ile Glu Gln Tyr Gly Asn Val Glu Ile Ile Asn His	
205 210 215 220	
aag act ggg gac aaa tgt gtg ttg aat ttt aag cca tgt ggc ctt ttt	781
Lys Thr Gly Asp Lys Cys Val Leu Asn Phe Lys Pro Cys Gly Leu Phe	
221 226 231 236	
ggg aag gaa tta cac aaa gtt gaa ggc tac att caa gat aaa agc aaa	829

Gly Lys Glu Leu His	Lys Val Glu Gly Tyr	Ile Gln Asp Lys Ser Lys	
237	242	247	252
aag aag ctc tgt gcc	ctc tat ggg aag tgg	act gaa tgt tta tac	agt 877
Lys Lys Leu Cys Ala	Leu Tyr Gly Lys Trp	Thr Glu Cys Leu Tyr	Ser
253	258	263	268
gtt gac cct gcc acg	ttt gac gct tac aaa	aaa aat gat aag aaa	aat 925
Val Asp Pro Ala Thr	Phe Asp Ala Tyr Lys	Lys Asn Asp Lys Lys	Asn
269	274	279	284
aca gaa gag aag aag	aac agc aaa cag atg	agc acc tct gag gag	ttg 973
Thr Glu Glu Lys Lys	Asn Ser Lys Gln Met	Ser Thr Ser Glu Glu	Leu
285	290	295	300
gat gaa atg cca gtg	cag gat tct gaa agt	gta ttc att atc cct	gga 1021
Asp Glu Met Pro Val	Pro Asp Ser Glu Ser	Val Phe Ile Ile Pro	Gly
301	306	311	316
agc gtt ctt cta tgg	cga ata gcc cca cgg	cct cca aat tct gcc	cag 1069
Ser Val Leu Leu Trp	Arg Ile Ala Pro Arg	Pro Pro Asn Ser Ala	Gln
317	322	327	332
atg tat aat ttt act	agt ttt gca atg gtt	ttg aat gaa gta gac	aaa 1117
Met Tyr Asn Phe Thr	Ser Phe Ala Met Val	Leu Asn Glu Val Asp	Lys
333	338	343	348
gac atg gag agt gtg	att ccc aag aca gac	tgc agg tta cgg cct	gac 1165
Asp Met Glu Ser Val	Ile Pro Lys Thr Asp	Cys Arg Leu Arg Pro	Asp
349	354	359	364
atc aga gcc atg gaa	aat gga gag ata gat	caa gct agt gaa gaa	aaa 1213
Ile Arg Ala Met Glu	Asn Gly Glu Ile Asp	Gln Ala Ser Glu Glu	Lys
365	370	375	380
aaa cga ctt gag gaa	aaa caa aga gca gcc	cgc aaa aac agg tcc	aag 1261
Lys Arg Leu Glu Glu	Lys Gln Arg Ala Ala	Arg Lys Asn Arg Ser	Lys
381	386	391	396
tca gaa gag gac tgg	aag acg agg tgg ttc	cat caa ggt cct aat	ccc 1309
Ser Glu Glu Asp Trp	Lys Thr Arg Trp Phe	His Gln Gly Pro Asn	Pro
397	402	407	412
tac aat gga gca cag	gac tgg att tac tct	ggc agc tac tgg gac	aga 1357
Tyr Asn Gly Ala Gln	Asp Trp Ile Tyr Ser	Gly Ser Tyr Trp Asp	Arg
413	418	423	428
aat tac ttc aat ttg	cct gac att tat taa	a atgcatacaa gtcagggtg	t 1408
Asn Tyr Phe Asn Leu	Pro Asp Ile Tyr *		
429	434		
ttggctaatac tacaaataag	tcttaaacct atgttttttaa	attttttttcc cttgggtttct	1468
acttatcttt taaaaaaaaa	aatgaaaaaa cactcatgag	ataactgcat ttcaccaaac	1528
aaaagcaggg tataaggcga	tattggtgat gaaagtctta	ggaaaaaatgc ataattttgc	1588

tataaaatgt acttatttgg aatactatatt tatatagagg taagagaaca ctgctgggga 1648
 atatgctttt tatgggtggt tggtgcccta ttacttgagg gttataccta aaaga 1703

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 <222> (1)..(4692)

<400> 46

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 1 5 10

tcc ctt agt cga atc aag agc aac gtg gat ggg cgg tac ctg gtg gac 96
 Ser Leu Ser Arg Ile Lys Ser Asn Val Asp Gly Arg Tyr Leu Val Asp
 17 22 27 32

ggc gtc cct ttc agc tgc tgc aat cct agc tcg cca cgg ccc tgc atc 144
 Gly Val Pro Phe Ser Cys Cys Asn Pro Ser Ser Pro Arg Pro Cys Ile
 33 38 43 48

cag tat cag atc acc aac aac tca gca cac tac agt tac gac cac cag 192
 Gln Tyr Gln Ile Thr Asn Asn Ser Ala His Tyr Ser Tyr Asp His Gln
 49 54 59 64

acg gag gag ctc aac ctg tgg gtg cgt ggc tgc agg gct gcc ctg ctg 240
 Thr Glu Glu Leu Asn Leu Trp Val Arg Gly Cys Arg Ala Ala Leu Leu
 65 70 75 80

agc tac tac agc agc ctc atg aac tcc atg ggt gtc gtc acg ctc ctc 288
 Ser Tyr Tyr Ser Ser Leu Met Asn Ser Met Gly Val Val Thr Leu Leu
 81 86 91 96

att tgg ctc ttc gag gtg acc att aca att ggg ctg cgc tac cta cag 336
 Ile Trp Leu Phe Glu Val Thr Ile Thr Ile Gly Leu Arg Tyr Leu Gln
 97 102 107 112

acg tcg ctg gat ggt gtg tcc aac ccc gag gaa tct gag agc gag agc 384
 Thr Ser Leu Asp Gly Val Ser Asn Pro Glu Glu Ser Glu Ser Glu Ser
 113 118 123 128

gag ggc tgg ctg ctg gag aag agc gtg ccg gag acc tgg aag gcc ttt 432
 Glu Gly Trp Leu Leu Glu Lys Ser Val Pro Glu Thr Trp Lys Ala Phe
 129 134 139 144

ctg gag agt gtg aag aag ctg ggc aag ggc aac cag gtg act gtg gct 480
 Leu Glu Ser Val Lys Lys Leu Gly Lys Gly Asn Gln Val Thr Val Ala
 145 150 155 160

att aac aaa aac atc	agc tct gac cct ttg	cca aga gca gtg gac aat	528
Ile Asn Lys Asn Ile	Ser Ser Asp Pro Leu	Pro Arg Ala Val Asp Asn	
161	166	171 176	
gaa ttt gag aca gtt	gcc act cag ctc cta	aaa agg acc caa gct atg	576
Glu Phe Glu Thr Val	Ala Thr Gln Leu Leu	Lys Arg Thr Gln Ala Met	
177	182	187 192	
ctt aac aaa tac aga	tgc ctg ctc cta gaa	gat gcc atg cga atc aat	624
Leu Asn Lys Tyr Arg	Cys Leu Leu Leu Glu	Asp Ala Met Arg Ile Asn	
193	198	203 208	
ccc tct gct gag atg	gtg atg atc gat agg	atg ttc aac cag gag gaa	672
Pro Ser Ala Glu Met	Val Met Ile Asp Arg	Met Phe Asn Gln Glu Glu	
209	214	219 224	
aga gct tcc ctg tcc	cga gac aag cgt ttg	gca ctt gta gac cct gag	720
Arg Ala Ser Leu Ser	Arg Asp Lys Arg Leu	Ala Leu Val Asp Pro Glu	
225	230	235 240	
ggc ttt cag gct gat	ttc tgt tgt tcc ttc	aaa ctt gat aaa gct gct	768
Gly Phe Gln Ala Asp	Phe Cys Cys Ser Phe	Lys Leu Asp Lys Ala Ala	
241	246	251 256	
cat gag aca cag ttt	ggc cgg agt gac cag	cat ggc agt aaa gca agc	816
His Glu Thr Gln Phe	Gly Arg Ser Asp Gln	His Gly Ser Lys Ala Ser	
257	262	267 272	
agc tct ctg caa ccg	cca gcc aag gcc caa	ggc aga gac cga gcc aaa	864
Ser Ser Leu Gln Pro	Pro Ala Lys Ala Gln	Gly Arg Asp Arg Ala Lys	
273	278	283 288	
acc ggt gtg acg gaa	ccc atg aat cat gac	cag ttt cat cta gtg cct	912
Thr Gly Val Thr Glu	Pro Met Asn His Asp	Gln Phe His Leu Val Pro	
289	294	299 304	
aat cac atc gtg gtc	tct gca gaa gga aac	att tct aaa aaa aca gaa	960
Asn His Ile Val Val	Ser Ala Glu Gly Asn	Ile Ser Lys Lys Thr Glu	
305	310	315 320	
tgc ctt ggc aga gca	ctg aaa ttt gac aaa	gtg ggc tta gtg cag tac	1008
Cys Leu Gly Arg Ala	Leu Lys Phe Asp Lys	Val Gly Leu Val Gln Tyr	
321	326	331 336	
cag agc acg tct gaa	gag aag gcc agc cgg	aga gag cct ctg aag gcc	1056
Gln Ser Thr Ser Glu	Glu Lys Ala Ser Arg	Arg Glu Pro Leu Lys Ala	
337	342	347 352	
agt cag tgc tct ccc	ggc cct gag ggg cac	cgg aaa acc tca tcc aga	1104
Ser Gln Cys Ser Pro	Gly Pro Glu Gly His	Arg Lys Thr Ser Ser Arg	
353	358	363 368	
tcg gat cat ggt act	gag agc aaa ctg tca	agc atc cta gca gat tcg	1152
Ser Asp His Gly Thr	Glu Ser Lys Leu Ser	Ser Ile Leu Ala Asp Ser	
369	374	379 384	
cac ttg gag atg acg	tgt aac aat tcc ttc	cag gac aaa agt ctg agg	1200

His	Leu	Glu	Met	Thr	Cys	Asn	Asn	Ser	Phe	Gln	Asp	Lys	Ser	Leu	Arg	
385					390					395					400	
aat	tct	cca	aag	aat	gaa	gtt	tta	cac	aca	gac	atc	atg	aaa	ggg	tca	1248
Asn	Ser	Pro	Lys	Asn	Glu	Val	Leu	His	Thr	Asp	Ile	Met	Lys	Gly	Ser	
401					406					411					416	
ggc	gaa	ccc	cag	cca	gat	ctc	cag	ctg	aca	aag	agc	ttg	gaa	acc	aca	1296
Gly	Glu	Pro	Gln	Pro	Asp	Leu	Gln	Leu	Thr	Lys	Ser	Leu	Glu	Thr	Thr	
417					422					427					432	
ttt	aag	aac	atc	ttg	gaa	ctc	aaa	aag	gcg	gga	cgg	cag	ccc	cag	agt	1344
Phe	Lys	Asn	Ile	Leu	Glu	Leu	Lys	Lys	Ala	Gly	Arg	Gln	Pro	Gln	Ser	
433					438					443					448	
gac	ccc	acg	gtt	agc	ggc	tct	gtt	gag	tta	gat	ttc	ccc	aac	ttt	tct	1392
Asp	Pro	Thr	Val	Ser	Gly	Ser	Val	Glu	Leu	Asp	Phe	Pro	Asn	Phe	Ser	
449					454					459					464	
cct	atg	gct	tca	cag	gaa	aac	tgc	ctg	gaa	aag	ttc	atc	ccg	gac	cac	1440
Pro	Met	Ala	Ser	Gln	Glu	Asn	Cys	Leu	Glu	Lys	Phe	Ile	Pro	Asp	His	
465					470					475					480	
agt	gac	gtt	gtc	atg	gat	gat	gat	gat	gac	tcg	tgt	ctc	ctt	gat	ctt	1488
Ser	Asp	Val	Val	Met	Asp	Asp	Asp	Asp	Asp	Ser	Cys	Leu	Leu	Asp	Leu	
481					486					491					496	
att	gga	gac	cca	caa	gca	ttg	aac	tat	ttt	cta	cat	gga	cct	agt	aat	1536
Ile	Gly	Asp	Pro	Gln	Ala	Leu	Asn	Tyr	Phe	Leu	His	Gly	Pro	Ser	Asn	
497					502					507					512	
aaa	tct	agc	aat	gat	gac	ttg	act	aat	gca	gga	tat	tct	gca	gcc	aat	1584
Lys	Ser	Ser	Asn	Asp	Asp	Leu	Thr	Asn	Ala	Gly	Tyr	Ser	Ala	Ala	Asn	
513					518					523					528	
tca	aat	tca	att	ttc	gcc	aac	tct	agt	aat	gct	gat	cct	aag	tca	tcc	1632
Ser	Asn	Ser	Ile	Phe	Ala	Asn	Ser	Ser	Asn	Ala	Asp	Pro	Lys	Ser	Ser	
529					534					539					544	
ctc	aaa	ggt	gta	agc	aac	cag	ctt	gga	gaa	ggg	ccc	agt	gat	gga	ctg	1680
Leu	Lys	Gly	Val	Ser	Asn	Gln	Leu	Gly	Glu	Gly	Pro	Ser	Asp	Gly	Leu	
545					550					555					560	
cca	ctt	tca	agt	agc	ctc	cag	ttt	ctt	gaa	gat	gaa	ctc	gag	tct	tct	1728
Pro	Leu	Ser	Ser	Ser	Leu	Gln	Phe	Leu	Glu	Asp	Glu	Leu	Glu	Ser	Ser	
561					566					571					576	
cct	ctt	cct	gat	ctc	act	gag	gac	caa	cct	ttc	gac	att	ctt	cag	aaa	1776
Pro	Leu	Pro	Asp	Leu	Thr	Glu	Asp	Gln	Pro	Phe	Asp	Ile	Leu	Gln	Lys	
577					582					587					592	
tcc	ttg	caa	gag	gcc	aat	atc	act	gaa	cag	aca	ttg	gca	gaa	gag	gca	1824
Ser	Leu	Gln	Glu	Ala	Asn	Ile	Thr	Glu	Gln	Thr	Leu	Ala	Glu	Glu	Ala	
593					598					603					608	
tat	ttg	gat	gcc	agt	ata	ggt	tca	agc	caa	cag	ttt	gca	caa	gct	cag	1872
Tyr	Leu	Asp	Ala	Ser	Ile	Gly	Ser	Ser	Gln	Gln	Phe	Ala	Gln	Ala	Gln	

609	614	619	624	
ctt cat cct tct tca tca gca tcc ttt act cag gct tct aat gtt tct				1920
Leu His Pro Ser Ser Ser Ala Ser Phe Thr Gln Ala Ser Asn Val Ser				
625	630	635	640	
aat tac tca ggt cag acg ctg cag cct ata ggg gtg acg cat gtg cct				1968
Asn Tyr Ser Gly Gln Thr Leu Gln Pro Ile Gly Val Thr His Val Pro				
641	646	651	656	
gtt gga gca tcg ttt gca agc aat aca gtg ggt gta caa cat ggc ttt				2016
Val Gly Ala Ser Phe Ala Ser Asn Thr Val Gly Val Gln His Gly Phe				
657	662	667	672	
atg caa cat gtg ggg atc agt gtt ccc agc cag cat ttg tct aat agc				2064
Met Gln His Val Gly Ile Ser Val Pro Ser Gln His Leu Ser Asn Ser				
673	678	683	688	
agt cag att agt ggt tct ggt caa ata cag tta att ggg tca ttt ggt				2112
Ser Gln Ile Ser Gly Ser Gly Gln Ile Gln Leu Ile Gly Ser Phe Gly				
689	694	699	704	
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Asn His Pro Ser Met Met Thr Ile Asn Asn Leu Asp Gly Ser Gln Ile				
705	710	715	720	
ata tta aag ggc agc ggg cag caa gcc cca tca aat gtg agt gga ggg				2208
Ile Leu Lys Gly Ser Gly Gln Gln Ala Pro Ser Asn Val Ser Gly Gly				
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Leu Leu Val His Arg Gln Thr Pro Asn Gly Asn Ser Leu Phe Gly Asn				
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Ser Ser Ser Ser Pro Val Ala Gln Pro Val Thr Val Pro Phe Asn Ser				
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Thr Asn Phe Gln Thr Ser Leu Pro Val His Asn Ile Ile Ile Gln Arg				
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Gly Leu Ala Pro Asn Ser Asn Lys Val Pro Ile Asn Ile Gln Pro Lys				
785	790	795	800	
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Pro Ile Gln Met Gly Gln Gln Asn Thr Tyr Asn Val Asn Asn Leu Gly				
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Ile Gln Gln His His Val Gln Gln Gly Ile Ser Phe Ala Ser Ala Ser				
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Ser Pro Gln Gly Ser Val Val Gly Pro His Met Ser Val Asn Ile Val				
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Thr Gly Gly Ser Ile	Val Ile His Ser Pro	Met Gly Gln Pro His Ala	
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Pro Gln Ser Gln Phe	Leu Ile Pro Thr Ser	Leu Ser Val Ser Ser Asn	
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Pro Ser Gln Leu Ile	Ser Gly Gln Val Ala	Ser Glu His Val Met Leu	
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Asp Ala Met Arg Ile Asn Pro Ser Ala Glu Met Val Met Ile Asp Arg	
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Met Phe Asn Gln Glu Glu Arg Ala Ser Leu Ser Arg Asp Lys Arg Leu	
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Arg Trp Arg Asp Gln Leu Leu Phe Met Ser Ile Ile Val Leu Val Ile						
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Val Val Ile Cys Leu Met Leu Tyr Ala Leu Leu Trp Glu Ala Gly Asn						
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Leu Thr Asp Leu Pro Asn Leu Arg Ile Gly Phe Tyr Asn Phe Cys Leu						
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Val Tyr Gly Ser Leu Val Leu Thr Leu Phe Ala Pro Gln Pro Leu Leu						
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Phe Leu Ala Val Ser Ser Val Leu Leu Ala Gly Gly Leu Gly Leu Phe						
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Arg Gly Ala Arg Asn Ala Arg Val Leu Arg Gly Ile Leu Ala Gly Ala
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Ser Ser Pro Glu Gly Lys Glu Glu Pro Glu Pro Leu Ser Pro Glu Leu
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Glu Tyr Ile Pro Arg Lys Arg Gly Lys Asn Pro Met Lys Ala Val Gly
61          66          71          76

ctg gcc tgg tac agc ctg tac acc cgc acc tgg ctc ggg tac ctc ttc 290
Leu Ala Trp Tyr Ser Leu Tyr Thr Arg Thr Trp Leu Gly Tyr Leu Phe
77          82          87          92

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Tyr Arg Gln Gln Leu Arg Arg Ala Arg Asn Arg Tyr Pro Lys Gly His
93          98          103          108

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Lys	His	Trp	Asp	His	Ser	Gly	Gly	Asn	Arg	Asp	Leu	Ser	Arg	Arg	His	
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Asp Tyr Ser Arg Ala	Gln Leu Leu Glu Glu	Leu Arg Arg Leu Lys	Asp	
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ttgggctgag cagaggacga c atg ttg ctt ttc gtg gag cag gta gca tct 171
Met Leu Leu Phe Val Glu Gln Val Ala Ser
1 5

aaa gga act ggt tta aat cct aat gcc aaa gta tgg caa gaa att gct 219
Lys Gly Thr Gly Leu Asn Pro Asn Ala Lys Val Trp Gln Glu Ile Ala
11 16 21 26

cct gga aat act gat gcc acc cca gta act cat gga act gaa agc tct 267
Pro Gly Asn Thr Asp Ala Thr Pro Val Thr His Gly Thr Glu Ser Ser
27 32 37 42

tgg cat gaa ata gca gct aca tca ggt gct cat cct gag ggt aat gca 315
Trp His Glu Ile Ala Ala Thr Ser Gly Ala His Pro Glu Gly Asn Ala
43 48 53 58

gag ctc tca gaa gat ata tgt aaa gaa tat gaa gta atg tat tct tca 363
Glu Leu Ser Glu Asp Ile Cys Lys Glu Tyr Glu Val Met Tyr Ser Ser
59 64 69 74

tct tgt gaa acc aca aga aat act aca ggc att gaa gaa tca act gat 411
Ser Cys Glu Thr Thr Arg Asn Thr Thr Gly Ile Glu Glu Ser Thr Asp
75 80 85 90

ggg atg att tta gga cca gaa gat ctg agt tac caa ata tat gat gtt 459
Gly Met Ile Leu Gly Pro Glu Asp Leu Ser Tyr Gln Ile Tyr Asp Val
91 96 101 106

tcc gga gaa agc aat tca gca gtt tct aca gaa gac cta aaa gaa tgt 507
Ser Gly Glu Ser Asn Ser Ala Val Ser Thr Glu Asp Leu Lys Glu Cys
107 112 117 122

ctg aag aaa caa tta gaa ttc tgt ttt tca cga gaa aat ttt tca aag 555
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123 128 133 138

gat ctt tac ttg ata tct caa atg gat agt gat cag ttc atc cca att	603
Asp Leu Tyr Leu Ile Ser Gln Met Asp Ser Asp Gln Phe Ile Pro Ile	
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Trp Thr Val Ala Asn Met Glu Glu Ile Lys Lys Leu Thr Thr Asp Pro	
155 160 165 170	
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Ala Phe Lys Tyr Leu Arg Glu Glu Val Lys Thr Phe Gln Gly Lys Pro	
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Ile Met Ala Arg Ile Lys Ala Ile Asn Thr Phe Phe Ala Lys Asn Gly	
267 272 277 282	
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Tyr Arg Leu Met Asp Ser Ser Ile Tyr Ser His Pro Ile Gln Thr Gln	
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gca cag tat gcc tcc cca gtc ttt atg cag cct gta tat aat cct cac	1083
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Gln Gln Tyr Ser Val Tyr Ser Ile Val Pro Gln Ser Trp Ser Pro Asn	
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Pro Thr Pro Tyr Phe Glu Thr Pro Leu Ala Pro Phe Pro Asn Gly Ser	
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Phe Val Asn Gly Phe Asn Ser Pro Gly Ser Tyr Lys Thr Asn Ala Ala	
347 352 357 362	

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Ala Met Asn Met Gly Arg Pro Phe Gln Lys Asn Arg Val Lys Pro Gln
363 368 373 378

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Phe Arg Ser Ser Gly Gly Ser Glu His Ser Thr Glu Gly Ser Val Ser
379 384 389 394

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Leu Gly Asp Gly Gln Leu Asn Arg Tyr Ser Ser Arg Asn Phe Pro Ala
395 400 405 410

gaa cgg cat aac ccc aca gta act ggg cat cag gag caa act tac ctt 1419
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411 416 421 426

cag aag gag act tcc act ttg cag gtg gaa cag aat ggg gac tat ggt 1467
Gln Lys Glu Thr Ser Thr Leu Gln Val Glu Gln Asn Gly Asp Tyr Gly
427 432 437 442

agg ggc agg taa gaa aataaagtac ctgaaaacct ttgataataa tgtgatcatc 1522
Arg Gly Arg *
443

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Met Ala Arg His Val Phe Leu
1 5

acg ggg ccc cca gga gtt gga aaa aca aca ttg atc cat aaa gcc agt 220
Thr Gly Pro Pro Gly Val Gly Lys Thr Thr Leu Ile His Lys Ala Ser
8 13 18 23

gag gtt tta aaa tcc tct ggt gtg cct gtt gat gga ttt tat acc gaa 268
Glu Val Leu Lys Ser Ser Gly Val Pro Val Asp Gly Phe Tyr Thr Glu
24 29 34 39

gaa gtc aga cag gga ggg aga aga ata gga ttc gat gtc gtc acg ttg	316
Glu Val Arg Gln Gly Gly Arg Arg Ile Gly Phe Asp Val Val Thr Leu	
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Ser Gly Thr Arg Gly Pro Leu Ser Arg Val Gly Leu Glu Pro Pro Pro	
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Gly Lys Arg Glu Cys Arg Val Gly Gln Tyr Val Val Asp Leu Thr Ser	
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Phe Glu Gln Leu Ala Leu Pro Val Leu Arg Asn Ala Asp Cys Ser Ser	
88 93 98 103	
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Gly Pro Gly Gln Arg Val Cys Val Ile Asp Glu Ile Gly Lys Met Glu	
104 109 114 119	
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Leu Phe Ser Gln Leu Phe Ile Gln Ala Val Arg Gln Thr Leu Ser Thr	
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Pro Gly Thr Ile Ile Leu Gly Thr Ile Pro Val Pro Lys Gly Lys Pro	
136 141 146 151	
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Asn Val Thr Lys Glu Asn Arg Asn His Leu Leu Pro Asp Ile Val Thr	
168 173 178 183	
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Cys Val Gln Ser Ser Arg Lys *	
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Glu Pro Val Gly Cys Gly Glu Cys Arg Gly Ser Ser Val Asp Pro
2 7 12 17

cgg agc acc ttc gtg ttg agt aac ctg gcg gag gtg gtg gag cgt gtg 154
Arg Ser Thr Phe Val Leu Ser Asn Leu Ala Glu Val Val Glu Arg Val
18 23 28 33

ctc acc ttc ctg ccc gcc aag gcg ttg ctg cgg gtg gcc tgc gtg tgc 202
Leu Thr Phe Leu Pro Ala Lys Ala Leu Leu Arg Val Ala Cys Val Cys
34 39 44 49

cgc tta tgg agg gag tgt gtg cgc aga gta ttg cgg acc cat cgg agc 250
Arg Leu Trp Arg Glu Cys Val Arg Arg Val Leu Arg Thr His Arg Ser
50 55 60 65

gta acc tgg atc tcc gca ggc ctg gcg gag gcc ggc cac ctg gag ggg 298
Val Thr Trp Ile Ser Ala Gly Leu Ala Glu Ala Gly His Leu Glu Gly
66 71 76 81

cat tgc ttg gtt cgc gtg gta gca gag gag ctt gag aat gtt cgc atc 346
His Cys Leu Val Arg Val Val Ala Glu Glu Leu Glu Asn Val Arg Ile
82 87 92 97

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Leu Pro His Thr Val Leu Tyr Met Ala Asp Ser Glu Thr Phe Ile Ser
98 103 108 113

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Leu Glu Glu Cys Arg Gly His Lys Arg Ala Arg Lys Arg Thr Ser Met
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130 135 140 145

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Leu Gly Ile Val Thr Pro Gly Ile Val Val Thr Pro Met Gly Ser Gly
146 151 156 161

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Ser Asn Arg Pro Gln Glu Ile Glu Ile Gly Glu Ser Gly Phe Ala Leu
162 167 172 177

tta ttc cct caa att gaa gga ata aaa ata caa ccc ttt cat ttt att 634
Leu Phe Pro Gln Ile Glu Gly Ile Lys Ile Gln Pro Phe His Phe Ile
178 183 188 193

aag gat cca aag aat tta aca tta gaa aga cat caa ctc act gaa gta 682
Lys Asp Pro Lys Asn Leu Thr Leu Glu Arg His Gln Leu Thr Glu Val
194 199 204 209

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Gly Leu Leu Asp Asn Pro Glu Leu Arg Val Val Leu Val Phe Gly Tyr	
210 215 220 225	
aat tgc tgt aag gtg gga gcc agt aat tat ctg cag caa gta gtc agc	778
Asn Cys Cys Lys Val Gly Ala Ser Asn Tyr Leu Gln Gln Val Val Ser	
226 231 236 241	
act ttc agt gat atg aat atc atc ttg gct gga ggc cag gtg gac aac	826
Thr Phe Ser Asp Met Asn Ile Ile Leu Ala Gly Gly Gln Val Asp Asn	
242 247 252 257	
ctg tca tca ctg act tct gaa aag aac cct ctg gat att gat gcc tcg	874
Leu Ser Ser Leu Thr Ser Glu Lys Asn Pro Leu Asp Ile Asp Ala Ser	
258 263 268 273	
ggt gtg gtt gga ctg tca ttt agt gga cac cga atc cag agt gcc act	922
Gly Val Val Gly Leu Ser Phe Ser Gly His Arg Ile Gln Ser Ala Thr	
274 279 284 289	
gtg ctc ctc aac gag gac gtc agt gat gag aag act gct gag gct gcg	970
Val Leu Leu Asn Glu Asp Val Ser Asp Glu Lys Thr Ala Glu Ala Ala	
290 295 300 305	
atg cag cgc ctc aaa gcg gcc aac att cca gag cat aac acc att ggc	1018
Met Gln Arg Leu Lys Ala Ala Asn Ile Pro Glu His Asn Thr Ile Gly	
306 311 316 321	
ttc atg ttt gca tgc gtt ggc agg ggc ttt cag tat tac aga gcc aag	1066
Phe Met Phe Ala Cys Val Gly Arg Gly Phe Gln Tyr Tyr Arg Ala Lys	
322 327 332 337	
ggg aat gtt gag gct gat gca ttt aga aag ttt ttt cct agt gtt ccc	1114
Gly Asn Val Glu Ala Asp Ala Phe Arg Lys Phe Phe Pro Ser Val Pro	
338 343 348 353	
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Leu Phe Gly Phe Phe Gly Asn Gly Glu Ile Gly Cys Asp Arg Ile Val	
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Thr Gly Asn Phe Ile Leu Arg Lys Cys Asn Glu Val Lys Asp Asp Asp	
370 375 380 385	
ctg ttt cat agc tat aca aca ata atg gca ctc ata cat ctg ggg tca	1258
Leu Phe His Ser Tyr Thr Thr Ile Met Ala Leu Ile His Leu Gly Ser	
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Gly Ile Leu Ala Gly Gly Ala Arg Glu Ala Ser Cys Arg Tyr Pro Ala
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ctg ggg cct cgc ctc gcc gct cac ttt cca gcg cag cgg ccg ccg cag      152
Leu Gly Pro Arg Leu Ala Ala His Phe Pro Ala Gln Arg Pro Pro Gln
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cgg aca ctc cag aac ggc ctg gcc ctg cag cgg tgc ctg cac gcg acg      200
Arg Thr Leu Gln Asn Gly Leu Ala Leu Gln Arg Cys Leu His Ala Thr
  36                               41                               46                               51

gcg acc cgg gct ctc ccg ctc att ccc atc gtg gtg gag cag acg ggt      248
Ala Thr Arg Ala Leu Pro Leu Ile Pro Ile Val Val Glu Gln Thr Gly
  52                               57                               62                               67

cgc ggc gag cgc gcc tat gac atc tac tcg cgg ctg ctg cgg gag cgc      296
Arg Gly Glu Arg Ala Tyr Asp Ile Tyr Ser Arg Leu Leu Arg Glu Arg
  68                               73                               78                               83

atc gtg tgc gtc atg ggc ccg atc gat gac agc gtt gcc agc ctt gtt      344
Ile Val Cys Val Met Gly Pro Ile Asp Asp Ser Val Ala Ser Leu Val
  84                               89                               94                               99

atc gca cag ctc ctc ttc ctg ctt ctc gcc gcc ggc acc cca ggc atg      392
Ile Ala Gln Leu Leu Phe Leu Leu Leu Ala Ala Gly Thr Pro Gly Met
  100                               105                               110                               115

cgc cac tcg ctc ccc aac tcc cgt atc atg atc cac cag ccc tca gga      440
Arg His Ser Leu Pro Asn Ser Arg Ile Met Ile His Gln Pro Ser Gly
  116                               121                               126                               131

ggc gcc cgg ggc caa gcc aca gac att gcc atc cag gca gag gag atc      488
Gly Ala Arg Gly Gln Ala Thr Asp Ile Ala Ile Gln Ala Glu Glu Ile
  132                               137                               142                               147

atg aag ctc aag aag cag ctc tat aac atc tac gcc aag cac acc aaa      536
Met Lys Leu Lys Lys Gln Leu Tyr Asn Ile Tyr Ala Lys His Thr Lys
  148                               153                               158                               163

cag agc ctg cag gtg atc gag tcc gcc atg gag agg gac cgc tac atg      584
Gln Ser Leu Gln Val Ile Glu Ser Ala Met Glu Arg Asp Arg Tyr Met
  164                               169                               174                               179

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Leu Arg *
73

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Met Ser Gly Arg Leu Trp Ser Lys Ala Ile Phe Ala Gly Tyr Lys Arg
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Gly Leu Arg Asn Gln Arg Glu His Thr Ala Leu Leu Lys Ile Glu Gly
17 22 27 32
ggt tac gcc cga gat gaa aca gaa ttc tat ttg ggc aag aga tgc gct 201
Val Tyr Ala Arg Asp Glu Thr Glu Phe Tyr Leu Gly Lys Arg Cys Ala
33 38 43 48
tat gta tat aaa gca aag aac aac aca gtc act cct ggc ggc aaa cca 249
Tyr Val Tyr Lys Ala Lys Asn Asn Thr Val Thr Pro Gly Gly Lys Pro
49 54 59 64
aac aaa acc aga gtc atc tgg gga aaa gta act cgg gcc cat gga aac 297
Asn Lys Thr Arg Val Ile Trp Gly Lys Val Thr Arg Ala His Gly Asn
65 70 75 80
agt ggc atg gtt cgt gcc aaa ttc cga agc aat ctt cct gct aag gcc 345
Ser Gly Met Val Arg Ala Lys Phe Arg Ser Asn Leu Pro Ala Lys Ala
81 86 91 96
att gga cac aga atc cga gtg atg ctg tac ccc tca agg att taa act 393
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401

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gagcaaaagt tgcacagcta aaccaggggc tcattccag gacagac atg cag tta 176
Met Gln Leu
1tgg att ccg aaa gac aag tca agg aca ctg atg aca ttg aaa gtc cta 224
Trp Ile Pro Lys Asp Lys Ser Arg Thr Leu Met Thr Leu Lys Val Leu
4 9 14 19aac gca gta tcc gag aca gtg gct aca tcg act gct ggg att ccg agc 272
Asn Ala Val Ser Glu Thr Val Ala Thr Ser Thr Ala Gly Ile Pro Ser
20 25 30 35gca gcg act ccc tct ctg ctg ctg gcc acg gca gag atg att cct tcg 320
Ala Ala Thr Pro Ser Leu Leu Leu Ala Thr Ala Glu Met Ile Pro Ser
36 41 46 51aca gcc tgg att cct ttg gct ctg gct cgt cgg cag acg cct tca cca 368
Thr Ala Trp Ile Pro Leu Ala Leu Ala Arg Arg Gln Thr Pro Ser Pro
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Asp Val Val Leu Arg Gly Ser Ser Asp Gly Arg Gly Ser Asp Ser Glu
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Ser Asp Leu Pro His Arg Lys Leu Pro Asp Val Lys Lys Asp Asp Met
84 89 94 99tct gca cgg cgg act tcc cat ggt gag ccg aaa tca gca gtg cct ttt 512
Ser Ala Arg Arg Thr Ser His Gly Glu Pro Lys Ser Ala Val Pro Phe
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Asn Gln Tyr Leu Pro Asn Lys Ser Asn Gln Thr Ala Tyr Val Pro Ala
116 121 126 131cct ctg aga aag aag aaa gca gag aga gag gaa tac cgc aag agc tgg 608
Pro Leu Arg Lys Lys Lys Ala Glu Arg Glu Glu Tyr Arg Lys Ser Trp

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ccg aga act cct gtg tct gat gac gca gag agc acc agc atg ttt gac				704
Pro Arg Thr Pro Val Ser Asp Asp Ala Glu Ser Thr Ser Met Phe Asp				
164	169	174	179	
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Gln Glu Gln Leu Gln Leu Ile Asn Asn Gln Leu Arg Glu Glu Asp Asp				
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Lys Trp Gln Asp Asp Leu Ala Arg Trp Lys Ser Arg Arg Arg Ser Val				
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tct cag gac tta atc aag aaa gag gaa gaa agg aaa aaa atg gag aag				896
Ser Gln Asp Leu Ile Lys Lys Glu Glu Glu Arg Lys Lys Met Glu Lys				
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Leu Leu Ala Gly Glu Asp Gly Thr Ser Glu Arg Arg Lys Ser Ile Lys				
244	249	254	259	
acc tac aga gaa att gtt caa gaa aaa gag cgg aga gag aga gag ctg				992
Thr Tyr Arg Glu Ile Val Gln Glu Lys Glu Arg Arg Glu Arg Glu Leu				
260	265	270	275	
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His Glu Ala Tyr Lys Asn Ala Arg Ser Gln Glu Glu Ala Glu Gly Ile				
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ctt caa cag tac att gag agg ttc acc atc agt gag gct gtt ctc gaa				1088
Leu Gln Gln Tyr Ile Glu Arg Phe Thr Ile Ser Glu Ala Val Leu Glu				
292	297	302	307	
cgc ttg gag atg cca aaa att ctg gaa aga agc cat tca aca gag cca				1136
Arg Leu Glu Met Pro Lys Ile Leu Glu Arg Ser His Ser Thr Glu Pro				
308	313	318	323	
aat tta tcc tcc ttc ctg aat gac ccc aat ccc atg aaa tac ctg cgg				1184
Asn Leu Ser Ser Phe Leu Asn Asp Pro Asn Pro Met Lys Tyr Leu Arg				
324	329	334	339	
caa cag tca ctg cct cca ccc aaa ttc act gcc act gtt gaa acc acc				1232
Gln Gln Ser Leu Pro Pro Pro Lys Phe Thr Ala Thr Val Glu Thr Thr				
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att gct cgt gcc agt gtt ctg gat acc agc atg tca gca ggc agt ggg				1280
Ile Ala Arg Ala Ser Val Leu Asp Thr Ser Met Ser Ala Gly Ser Gly				
356	361	366	371	

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Ser Pro Ser Lys Thr Val Thr Pro Lys Ala Val Pro Met Leu Thr Pro	
372 377 382 387	
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Lys Pro Tyr Ser Gln Pro Lys Asn Ser Gln Asp Val Leu Lys Thr Phe	
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Lys Val Asp Gly Lys Val Ser Val Asn Gly Glu Thr Val His Arg Glu	
404 409 414 419	
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Glu Glu Lys Glu Arg Glu Cys Pro Thr Val Ala Pro Ala His Ser Leu	
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Thr Lys Ser Gln Met Phe Glu Gly Val Ala Arg Val His Gly Ser Pro	
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Leu Glu Leu Lys Gln Asp Asn Gly Ser Ile Glu Ile Asn Ile Lys Lys	
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Pro Asn Ser Val Pro Gln Glu Leu Ala Ala Thr Thr Glu Lys Thr Glu	
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Pro Asn Ser Gln Glu Asp Lys Asn Asp Gly Gly Lys Ser Arg Lys Gly	
484 489 494 499	
aat ata gaa ctt gcc tca tca gaa cca cag cat ttt aca aca act gtg	1712
Asn Ile Glu Leu Ala Ser Ser Glu Pro Gln His Phe Thr Thr Thr Val	
500 505 510 515	
act cga tgc agc ccg acc gtg gcc ttt gtg gaa ttt ccc tcc agc ccc	1760
Thr Arg Cys Ser Pro Thr Val Ala Phe Val Glu Phe Pro Ser Ser Pro	
516 521 526 531	
cag ctg aag aat gat gtg tcg gaa gaa aaa gac cag aag aaa cca gaa	1808
Gln Leu Lys Asn Asp Val Ser Glu Glu Lys Asp Gln Lys Lys Pro Glu	
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Asn Glu Met Ser Gly Lys Val Glu Leu Val Leu Ser Gln Lys Val Val	
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Lys Pro Lys Ser Pro Glu Pro Glu Ala Thr Leu Thr Phe Pro Phe Leu	
564 569 574 579	
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Asp Lys Met Pro Glu Ala Asn Gln Leu His Leu Pro Asn Leu Asn Ser	
580 585 590 595	

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Lys Phe Trp Ala Trp Asp Pro Glu Glu Glu Arg Arg Arg Gln Glu Lys	
612 617 622 627	
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Trp Gln Gln Glu Gln Glu Arg Leu Leu Gln Glu Arg Tyr Gln Lys Glu	
628 633 638 643	
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Gln Asp Lys Leu Lys Glu Glu Trp Glu Lys Ala Gln Lys Glu Val Glu	
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Phe Gln Gly Asp Asp Ser Asp Leu Leu Leu Lys Thr Arg Glu Ser Asp	
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756 761 766 771	
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Glu Ala Gly Ala Pro His Cys Gly Thr Asn Pro Gln Leu Ala Gln Asp	
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cca tcc cag aat cag cag aca tca aat cca acg cac agt tca gaa gat	2576
Pro Ser Gln Asn Gln Gln Thr Ser Asn Pro Thr His Ser Ser Glu Asp	
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Val Lys Pro Lys Thr Leu Pro Leu Asp Lys Ser Ile Asn His Gln Ile	
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Glu Ser Pro Ser Glu Arg Arg Lys Ser Ile Ser Gly Lys Lys Leu Cys	
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Thr Leu Asn Leu Tyr Phe His Ile Gln Cys Phe Arg Cys Gly Ile Cys	
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Lys Gly Gln Leu Gly Asp Ala Val Ser Gly Thr Asp Val Arg Ile Arg	
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Asn Gly Leu Leu Asn Cys Asn Asp Cys Tyr Met Arg Ser Arg Ser Ala	
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 Met Glu Pro Gly Asn
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 Arg Ser Leu Asn Pro His Lys Thr Lys His His Met Glu Cys Arg Val
 6 11 16 21
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 Thr Gly Arg Ala Glu Val Thr Ala Ser Arg Glu Gly Arg Gly Ala Cys
 22 27 32 37
 gca tgg gag tgt ggc tca tct cgg ggg cca tgg ggc ctc ctg agg tac 437
 Ala Trp Glu Cys Gly Ser Ser Arg Gly Pro Trp Gly Leu Leu Arg Tyr
 38 43 48 53
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 Thr Phe Ala Pro Val Arg Ala Ser Arg Pro Trp Ala Cys Leu Pro Lys
 54 59 64 69
 ggc tca cta agc cag agg cca aag gtg ccc cct ccc gtt cac cta cca 533
 Gly Ser Leu Ser Gln Arg Pro Lys Val Pro Pro Pro Val His Leu Pro
 70 75 80 85
 ccc aag tcc tca tgc cct ccg agg gct ggg gga gga ggg gct caa gga 581
 Pro Lys Ser Ser Cys Pro Pro Arg Ala Gly Gly Gly Gly Ala Gln Gly
 86 91 96 101
 agg cgg gtt cca tgt aca tat tta tca ccc ctt tca cat agc ccc aag 629
 Arg Arg Val Pro Cys Thr Tyr Leu Ser Pro Leu Ser His Ser Pro Lys
 102 107 112 117

acc ttt tgt aca ttt tta cag ggg tgc ccc tag caacaggcg
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 118 123 128

671

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 Met Lys Lys Ser Pro Glu Ile Ile Ser Gly
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 Arg Met Thr Phe Gly Thr Ala Ser Glu Leu Ala Ser Val Cys Met Pro
 11 16 21 26
 cgc aac aaa tga agt agcccagctc atccaggag ggcggcttat caaacacgag 393
 Arg Asn Lys *
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Met Glu Asp Ala Gly
1
gca gct ggc ccg ggg ccg gag cct gag ccc gag ccc gag ccg gag ccc 643
Ala Ala Gly Pro Gly Pro Glu Pro Glu Pro Glu Pro Glu Pro Glu Pro
6 11 16 21
gag ccc gcg ccg gag ccg gaa ccg gag ccc aag ccg ggt gct ggc aca 691
Glu Pro Ala Pro Glu Pro Glu Pro Glu Pro Lys Pro Gly Ala Gly Thr
22 27 32 37
tcc gag gcg ttc tcc cga ctc tgg acc gac gtg atg ggt atc ctg gac 739
Ser Glu Ala Phe Ser Arg Leu Trp Thr Asp Val Met Gly Ile Leu Asp
38 43 48 53
ggt tca ctg gga aac atc gat gac ctg gcg cag cag tat gca gat tat 787
Gly Ser Leu Gly Asn Ile Asp Asp Leu Ala Gln Gln Tyr Ala Asp Tyr
54 59 64 69
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Tyr Asn Thr Cys Phe Ser Asp Val Cys Glu Arg Met Glu Glu Leu Arg
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Lys Arg Arg Val Ser Gln Asp Leu Glu Val Glu Lys Pro Asp Ala Ser
86 91 96 101
ccc acg tca ctt cag ctg cgg tcc cag atc gaa gag tcg ctt ggc ttc 931
Pro Thr Ser Leu Gln Leu Arg Ser Gln Ile Glu Glu Ser Leu Gly Phe
102 107 112 117
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Cys Ser Ala Val Ser Thr Pro Glu Val Glu Arg Lys Asn Pro Leu His
118 123 128 133
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Lys Ser Asn Ser Glu Asp Ser Ser Val Gly Lys Gly Asp Trp Lys Lys

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Lys Asn Lys Tyr Phe	Trp Gln Asn Phe Arg	Lys Asn Gln Lys Gly Ile		
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atg aga cag act tca	aaa gga gaa gac gtt	ggt tat gtt gcc agt gaa	1123	
Met Arg Gln Thr Ser	Lys Gly Glu Asp Val	Gly Tyr Val Ala Ser Glu		
166	171	176	181	
ata acg atg agc gat	gag gag cgg att cag	cta atg atg atg gtc aaa	1171	
Ile Thr Met Ser Asp	Glu Glu Arg Ile Gln	Leu Met Met Met Val Lys		
182	187	192	197	
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Glu Lys Met Ile Thr	Ile Glu Glu Ala Leu	Ala Arg Leu Lys Glu Tyr		
198	203	208	213	
gag gcc cag cac cgg	cag tcg gct gcc ctg	gac cct gct gac tgg cca	1267	
Glu Ala Gln His Arg	Gln Ser Ala Ala Leu	Asp Pro Ala Asp Trp Pro		
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Asp Gly Ser Tyr Pro	Thr Phe Asp Gly Ser	Ser Asn Cys Asn Ser Arg		
230	235	240	245	
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Glu Gln Ser Asp Asp	Glu Thr Glu Glu Ser	Val Lys Phe Lys Arg Leu		
246	251	256	261	
cac aag ctg gta aac	tcc act cgc aga gtc	aga aag aaa cta att agg	1411	
His Lys Leu Val Asn	Ser Thr Arg Arg Val	Arg Lys Lys Leu Ile Arg		
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Glu Ser Arg Gly Leu	Ile Lys Pro Pro Lys	Lys Met Gly Thr Phe Phe		
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Ser Tyr Pro Glu Glu Glu Lys Ala Gln Lys Val Ser Arg Ser Leu Thr	
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Cys Ser Phe Gly Gly Phe Asp Leu Thr Asn Arg Ser Leu His Val Gly	
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Ser Asn Asn Ser Asp Pro Met Gly Lys Glu Gly Asp Phe Val Tyr Lys	
422 427 432 437	
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Glu Val Ile Lys Ser Pro Thr Ala Ser Arg Ile Ser Leu Gly Lys Lys	
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Pro Tyr Arg Gly Pro Phe Cys Gly Arg Ala Arg Val His Thr Asp Phe	
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Thr Pro Ser Pro Tyr Asp Thr Asp Ser Leu Lys Leu Lys Lys Gly Asp	
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Ile Ile Asp Ile Ile Ser Lys Pro Pro Met Gly Thr Trp Met Gly Leu	
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Leu Asn Asn Lys Val Gly Thr Phe Lys Phe Ile Tyr Val Asp Val Leu	
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Ser Glu Asp Glu Glu Lys Pro Lys Arg Pro Thr Arg Arg Arg Arg Lys	
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Gly Arg Pro Pro Gln Pro Lys Ser Val Glu Asp Leu Leu Asp Arg Ile	
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Asn Leu Lys Glu His Met Pro Thr Phe Leu Phe Asn Gly Tyr Glu Asp	
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Gly Leu Asn Lys Asn Arg Arg Ser Leu Pro Val Ser Ile Cys Arg Ser	
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His Ser Leu Asp Asp Leu Gln Val Glu Pro Gly Ala Glu Gln Asp Val	
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Asn Gly Leu His Pro Val Pro Met Gly Pro Ser Gly Ala Leu Pro Ser	
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Pro Asp Ala Pro Cys Leu Pro Val Lys Arg Gly Ser Pro Ala Ser Pro	
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Val Ser Pro Gly Cys Ile Ser Ser Val Ser Asp Trp Leu Ile Ser Ile				
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Gly Leu Pro Met Tyr Ala Gly Thr Leu Ser Thr Ala Gly Phe Ser Thr				
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Phe Lys Leu Pro Pro Gly Pro Glu Ala Met *				
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Met Ala Thr
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Lys Glu Asn Ile Leu His Val Ser Glu Asn Val Ile Phe Thr Asp Val
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52 57 62 67
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Tyr Gly Ser Asn Leu Met Glu His Thr Glu Ile Asp His Trp Leu Glu
68 73 78 83
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Phe Ser Ala Thr Lys Leu Ser Ser Cys Asp Ser Phe Thr Ser Thr Ile
84 89 94 99
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Ser	Leu	Ser	Leu	Ala	Asp	Leu	Cys	Val	Trp	Ala	Thr	Leu	Lys	Gly	Asn		
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Ile	Gly	His	Ala	Lys	Ala	Ala	Leu	Leu	Asn	Gln	His	Tyr	Gln	Val	Asn		
212					217					222					227		
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Asp	Asp	Thr	Pro	Ala	Glu	Gln	Met	Lys	Ala	Glu	Arg	Glu	Gln	Arg	Ile		
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Glu	Glu	Met	Lys	Lys	Gly	Ser	Gln	Phe	Gly	Gln	Ser	Cys	Cys	Leu	Arg		

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Cys Leu Lys Asp Leu Lys Lys Gly Asp Ile Ile Gln Leu Gln Arg Arg	
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ata tat aaa gaa cgt tgg cca gat tat gta agg gaa ctg cga aga agg	1459
Ile Tyr Lys Glu Arg Trp Pro Asp Tyr Val Arg Glu Leu Arg Arg Arg	
438 443 448 453	
tat tct gca agt act gta gat gtt ata gaa atg atg gag gat gat aaa	1507
Tyr Ser Ala Ser Thr Val Asp Val Ile Glu Met Met Glu Asp Asp Lys	
454 459 464 469	
gtt gat ctg aat ttg att gtt gcc ctc atc cga tac att gtt ttg gaa	1555
Val Asp Leu Asn Leu Ile Val Ala Leu Ile Arg Tyr Ile Val Leu Glu	
470 475 480 485	
gaa gag gat ggt gcg ata ctg gtc ttt ctg cca ggc tgg gac aat atc	1603
Glu Glu Asp Gly Ala Ile Leu Val Phe Leu Pro Gly Trp Asp Asn Ile	
486 491 496 501	
agc act tta cat gat ctc ttg atg tca caa gta atg ttt aaa tca gat	1651
Ser Thr Leu His Asp Leu Leu Met Ser Gln Val Met Phe Lys Ser Asp	
502 507 512 517	
aaa ttt tta att ata cct tta cat tca ctg atg cct aca gtt aac cag	1699
Lys Phe Leu Ile Ile Pro Leu His Ser Leu Met Pro Thr Val Asn Gln	
518 523 528 533	
aca cag gtg ttt aaa aga acc cct cct ggt gtt cgg aaa ata gta att	1747
Thr Gln Val Phe Lys Arg Thr Pro Pro Gly Val Arg Lys Ile Val Ile	
534 539 544 549	
gct acc aac att gcg gag act agc att acc ata gat gat gtc gtt tat	1795
Ala Thr Asn Ile Ala Glu Thr Ser Ile Thr Ile Asp Asp Val Val Tyr	
550 555 560 565	
gtg ata gat gga gga aaa ata aaa gag acg cat ttt gat act cag aac	1843
Val Ile Asp Gly Gly Lys Ile Lys Glu Thr His Phe Asp Thr Gln Asn	
566 571 576 581	
aat atc agt aca atg tcc gct gag tgg gtt agt aaa gct aat gcc aaa	1891
Asn Ile Ser Thr Met Ser Ala Glu Trp Val Ser Lys Ala Asn Ala Lys	
582 587 592 597	
cag aga aaa ggt cga gct gga aga gtt caa cct ggt cat tgc tat cat	1939
Gln Arg Lys Gly Arg Ala Gly Arg Val Gln Pro Gly His Cys Tyr His	
598 603 608 613	
ctg tat aat ggt ctt aga gca agt ctt cta gat gac tat caa ctg cca	1987

838	843	848	853	
aga aaa atg gta aaa gtt tac aca aaa acc gat ggc ctg gtt gct gtt				2707
Arg Lys Met Val Lys Val Tyr Thr Lys Thr Asp Gly Leu Val Ala Val				
854	859	864	869	
cat cct aaa tct gtt aat gtg gag caa aca gac ttt cac tac aac tgg				2755
His Pro Lys Ser Val Asn Val Glu Gln Thr Asp Phe His Tyr Asn Trp				
870	875	880	885	
ctt atc tat cac cta aag atg aga aca agc agt ata tac ttg tat gac				2803
Leu Ile Tyr His Leu Lys Met Arg Thr Ser Ser Ile Tyr Leu Tyr Asp				
886	891	896	901	
tgc aca gag gtt tcc cca tac tgt ctc ttg ttt ttt gga ggt gac att				2851
Cys Thr Glu Val Ser Pro Tyr Cys Leu Leu Phe Phe Gly Gly Asp Ile				
902	907	912	917	
tcc atc cag aag gat aac gat cag gaa act att gct gta gat gag tgg				2899
Ser Ile Gln Lys Asp Asn Asp Gln Glu Thr Ile Ala Val Asp Glu Trp				
918	923	928	933	
att gta ttt cag tct cca gca aga att gcc cat ctt gtt aag gaa tta				2947
Ile Val Phe Gln Ser Pro Ala Arg Ile Ala His Leu Val Lys Glu Leu				
934	939	944	949	
aga aag gaa cta gat att ctt ctg caa gag aag att gaa agt cct cat				2995
Arg Lys Glu Leu Asp Ile Leu Leu Gln Glu Lys Ile Glu Ser Pro His				
950	955	960	965	
cct gta gac tgg aat gac act aaa tcc aga gac tgt gca gta ctg tca				3043
Pro Val Asp Trp Asn Asp Thr Lys Ser Arg Asp Cys Ala Val Leu Ser				
966	971	976	981	
gct att ata gac ttg atc aaa aca cag gaa aag gca act ccc agg aac				3091
Ala Ile Ile Asp Leu Ile Lys Thr Gln Glu Lys Ala Thr Pro Arg Asn				
982	987	992	997	
ttt ccg cca cga ttc cag gat gga tat tac agc tga cagc ttttcagggg				3141
Phe Pro Pro Arg Phe Gln Asp Gly Tyr Tyr Ser *				
998	1003	1008		
tggtctgaaa agccagtttg acagccattc ttcattcattg tttaaatttt ggctggatgc				3201
caaaccctgg gacatgaaca attttcatgt gtaaggtaga agccttcagt aggtagtaaa				3261
gacttaatgt gcatgacttg atgttatatg tagagatata tatatatata tatatatacc				3321
ataaaagcaa tatgtttctt gatcatatac tctgctgtgg tcatgccac tctttgggag				3381
tatattccct ttatatatat tgagtattgt accacttgag aaattccttt gttctgttat				3441
acaaaattaa tctttctgct cataatgatt gatgatacca ccagtaaaaa taggatgttt				3501
accccaaaac aagtgtcaat taagaatttg aacacaacca catttttttaa aatgaaactt				3561
ctatcggaag taaattaatt tgttgtaata aagtccagta ttttaataaaa tgtacaatgt				3621

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3667

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<213> Homo sapiens

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<400> 62

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tccactctaa cacctcagag taaagaactg atgggcaggc atcggttctt gctgacaatt 180
gccaacccgc atgagattgc tgagctgagg tggactctcc agacactgga actggaactc 240
caggcccaat ggctcttgtt aagaatgctg caacgtgaga cccttgagag agactgactt 300
gttgaag atg aag aga aaa cca aga gcc tcc agt cca gtt gtt gaa gag 349
Met Lys Arg Lys Pro Arg Ala Ser Ser Pro Val Val Glu Glu
1 5 10
caa cca cga gcc aac acc aag gag aca agg aag aag aag tcc ttc tot 397
Gln Pro Arg Ala Asn Thr Lys Glu Thr Arg Lys Lys Lys Ser Phe Ser
15 20 25 30
caa ccg atg acc gca agc aca aag aag agt ccc aag ata gcg aag aaa 445
Gln Pro Met Thr Ala Ser Thr Lys Lys Ser Pro Lys Ile Ala Lys Lys
31 36 41 46
gga aaa taa ctcaagg gagagccagg aagaaaaatg ctccacaaaa atccatggct 501
Gly Lys *
47
ttaagaatac ttgaggaagg gagcaggcca acacctctg gccacagtga ccagctgaat 561
gaggaactct aacagaatga gctgcagttg gagcaacaga ggggacatag ctggaacaac 621
agagcgaggg gacacagccg gagcaacaga gtgggaggat gccaacatt tcaactctct 681
ccctgagcag cgagtaattt cagggaagc ccagagacta ggatccatct gagaagtctt 741
cagaggtctg acccagagta ctcaacaaca ggatactcc catggtgatg aaaataaaat 801
gaatcttgtg ttcaccgttg tattcctcac gacttaagtt aaaaacctga tgaaaagtgg 861
ttaatctcca taatgggtgt tagctccatc gcaggagca tgaggttga cagacagagt 921
cgggcaaggt tatggagaag acttaatcca tccacaagag gtccgagtat gttgatgaag 981

tgatgacagt actgtttcaa gaacatcaac cctgccgcag tgcggacgcg tgggtcgacc 1041

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cggtggcctc ggtcccggta agccaggc atg aag atc aca agg cag aaa cat 112
Met Lys Ile Thr Arg Gln Lys His
1 5

gcc aag aag cat ctt ggc ttc ttc cgc aac aac ttc gga gtc cgc gag 160
Ala Lys Lys His Leu Gly Phe Phe Arg Asn Asn Phe Gly Val Arg Glu
9 14 19 24

cgc tac cag atc ctg ctg gac ggc acc ttc tgt cag gcg gcg ctg cgg 208
Pro Tyr Gln Ile Leu Leu Asp Gly Thr Phe Cys Gln Ala Ala Leu Arg
25 30 35 40

ggc cgc atc cag ctg cgg gag cag ctg ccc cgc tac ctc atg ggg gag 256
Gly Arg Ile Gln Leu Arg Glu Gln Leu Pro Arg Tyr Leu Met Gly Glu
41 46 51 56

acg cag ctg tgc acc aca aga tgt gtg tta aaa gag cta gaa aca ttg 304
Thr Gln Leu Cys Thr Thr Arg Cys Val Leu Lys Glu Leu Glu Thr Leu
57 62 67 72

gga aag gac tta tat ggg gca aaa ctg att gca caa aaa tgc caa gtt 352
Gly Lys Asp Leu Tyr Gly Ala Lys Leu Ile Ala Gln Lys Cys Gln Val
73 78 83 88

cga aat tgt cct cat ttc aag aat gca gtg agt gga tca gaa tgt ctg 400
Arg Asn Cys Pro His Phe Lys Asn Ala Val Ser Gly Ser Glu Cys Leu
89 94 99 104

ctt tcc atg gtt gaa gag gga aat cct cat cat tat ttt gtg gca aca 448
Leu Ser Met Val Glu Glu Gly Asn Pro His His Tyr Phe Val Ala Thr
105 110 115 120

cag gat cag aat ttg tct gtg aaa gta aaa aag aag cct gga gtt cct 496
Gln Asp Gln Asn Leu Ser Val Lys Val Lys Lys Lys Pro Gly Val Pro
121 126 131 136

ctc atg ttt att att cag aac act atg gtt ttg gac aaa cct tct ccc 544

Leu Met Phe Ile Ile Gln Asn Thr Met Val	Leu Asp Lys Pro Ser Pro	
137	142 147 152	
aaa aca att gcc ttt gta aaa gca gtg gag tca ggt cag ctt gtc tca		592
Lys Thr Ile Ala Phe Val Lys Ala Val Glu Ser Gly Gln Leu Val Ser		
153	158 163 168	
gtg cat gag aaa gaa agt atc aaa cat ctc aaa gag gaa cag ggt tta		640
Val His Glu Lys Glu Ser Ile Lys His Leu Lys Glu Glu Gln Gly Leu		
169	174 179 184	
gtg aaa aac act gaa cag agt aga aga aaa aag cgc aag aaa ata agt		688
Val Lys Asn Thr Glu Gln Ser Arg Arg Lys Lys Arg Lys Lys Ile Ser		
185	190 195 200	
ggg ccc aat cct ctt agt tgt ttg aag aaa aag aaa aag gca ccg gac		736
Gly Pro Asn Pro Leu Ser Cys Leu Lys Lys Lys Lys Lys Ala Pro Asp		
201	206 211 216	
aca caa tca tct gct tct gaa aag aaa aga aaa aga aaa aga att cgg		784
Thr Gln Ser Ser Ala Ser Glu Lys Lys Arg Lys Arg Lys Arg Ile Arg		
217	222 227 232	
aac aga tct aac cca aaa gta ctt tct gag aag cag aat gca gaa gga		832
Asn Arg Ser Asn Pro Lys Val Leu Ser Glu Lys Gln Asn Ala Glu Gly		
233	238 243 248	
gaa tga atcctttgga tactttcaag gacattcaaa tgtgaaaatg aatttttttac		888
Glu *		
249		
aactagaagt atttataata aaagacccaaa cttattttttg taaatgaacc catatgcttt		948
actaaaatta attataaaat aaaaacagtg accagtctag ccagcatgga aaaccccatc		1008
tctactaaaa tacaaaaatt agctgggcat gatgggtgcac agttgtaatt ccagctactc		1068
aggaggctga ggcattgagaa tcgcttgaac ctgggaggca gagattgcag tgagcccagt		1128
tcgtgtcact tcaactccagc ctgggcaaca gaggagaaac atgtctcaaa aaaaaaata		1188
aaaacagtgat atgggtgtag gtgtgatgga attcacttta cttactaaat ggttttcggga		1248
ggttgtttct ccaggtaaaa ttgtgcctc tctgggtcca tccccactt caaacattat		1308
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tcctctttca cattgaca		1386

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<400> 64

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agcg atg cgg gaa tgc ata tca gtc cac gtg ggc caa gcg gga gtt cag	169
Met Arg Glu Cys Ile Ser Val His Val Gly Gln Ala Gly Val Gln	
1 5 10	
att ggc aat gcc tgc tgg gag ctc ttc tgc ctg gaa cac ggc atc cag	217
Ile Gly Asn Ala Cys Trp Glu Leu Phe Cys Leu Glu His Gly Ile Gln	
16 21 26 31	
gca gac ggc act ttt gat gct caa gct agc aag atc aac gat gat gac	265
Ala Asp Gly Thr Phe Asp Ala Gln Ala Ser Lys Ile Asn Asp Asp Asp	
32 37 42 47	
tcc ttc acc acc ttt ttc agc gag act ggc aat ggg aag cat gtg ccc	313
Ser Phe Thr Thr Phe Phe Ser Glu Thr Gly Asn Gly Lys His Val Pro	
48 53 58 63	
cgg gcc gtc atg ata gat ctg gag cct act gta gtg gat gag gtt cgg	361
Arg Ala Val Met Ile Asp Leu Glu Pro Thr Val Val Asp Glu Val Arg	
64 69 74 79	
gca gga acc tac cgc cag ctc ttc cat cca gag cag ctg atc aca gga	409
Ala Gly Thr Tyr Arg Gln Leu Phe His Pro Glu Gln Leu Ile Thr Gly	
80 85 90 95	
aag gag gat gca gcc aac aac tat gcc cgg ggc cac tac acg gtg ggc	457
Lys Glu Asp Ala Ala Asn Asn Tyr Ala Arg Gly His Tyr Thr Val Gly	
96 101 106 111	
aag gag agc att gac ctg gtg ctg gac cgc ata cgg aag ctg aca gat	505
Lys Glu Ser Ile Asp Leu Val Leu Asp Arg Ile Arg Lys Leu Thr Asp	
112 117 122 127	
gct tgc tct ggc ctg cag ggc ttc ctg att ttc cac agt ttt ggt ggg	553
Ala Cys Ser Gly Leu Gln Gly Phe Leu Ile Phe His Ser Phe Gly Gly	
128 133 138 143	
ggc act ggc tcc ggc ttc act tct ctg ctg atg gaa cgc ctc tcc ctg	601
Gly Thr Gly Ser Gly Phe Thr Ser Leu Leu Met Glu Arg Leu Ser Leu	
144 149 154 159	
gat tat ggc aag aaa tcc aag ctg gag ttt gcc atc tac cca gcc ccc	649
Asp Tyr Gly Lys Lys Ser Lys Leu Glu Phe Ala Ile Tyr Pro Ala Pro	
160 165 170 175	
cag gtc tct act gca gtg gtg gag ccc tac aac tcc atc ctg acc acc	697
Gln Val Ser Thr Ala Val Val Glu Pro Tyr Asn Ser Ile Leu Thr Thr	
176 181 186 191	

cac acc aca ctg gaa cat tca gat tgt gct ttc atg gtg gac aac gaa	745
His Thr Thr Leu Glu His Ser Asp Cys Ala Phe Met Val Asp Asn Glu	
192 197 202 207	
gcc atc tat gac atc tgc cgc agg aac ctt gac att gag cgc cct acc	793
Ala Ile Tyr Asp Ile Cys Arg Arg Asn Leu Asp Ile Glu Arg Pro Thr	
208 213 218 223	
tat acc aac ctc aac cgc ctc atc agt cag att gtg tcc tca atc act	841
Tyr Thr Asn Leu Asn Arg Leu Ile Ser Gln Ile Val Ser Ser Ile Thr	
224 229 234 239	
gct tct ctc cgc ttt gac ggg gcc ctc aat gtg gac ctc act gag ttc	889
Ala Ser Leu Arg Phe Asp Gly Ala Leu Asn Val Asp Leu Thr Glu Phe	
240 245 250 255	
cag acc aac ctg gtg ccc tac ccc cgc atc cac ttc ccg ctg gtc acc	937
Gln Thr Asn Leu Val Pro Tyr Pro Arg Ile His Phe Pro Leu Val Thr	
256 261 266 271	
tac gcg ccc atc atc tct gcc gag aaa gcc tat cac gaa cag ctc tct	985
Tyr Ala Pro Ile Ile Ser Ala Glu Lys Ala Tyr His Glu Gln Leu Ser	
272 277 282 287	
gtg gcc gag ata acc agc tcc tgc ttt gag ccc aac agc cag atg gtg	1033
Val Ala Glu Ile Thr Ser Ser Cys Phe Glu Pro Asn Ser Gln Met Val	
288 293 298 303	
aag tgc gac ccg aga cat ggc aag tac atg gcc tgc tgc atg ctc tac	1081
Lys Cys Asp Pro Arg His Gly Lys Tyr Met Ala Cys Cys Met Leu Tyr	
304 309 314 319	
cgg ggc gac gtg gtg ccc aag gat gtg aat gtc gct att gct gcc atc	1129
Arg Gly Asp Val Val Pro Lys Asp Val Asn Val Ala Ile Ala Ala Ile	
320 325 330 335	
aag acc aag agg acc atc cag ttt gta gac tgg tgt ccc aca ggc ttc	1177
Lys Thr Lys Arg Thr Ile Gln Phe Val Asp Trp Cys Pro Thr Gly Phe	
336 341 346 351	
aag gtg ggc atc aac tac cag ccc ccg acc gtg gtc ccc ggg gga gac	1225
Lys Val Gly Ile Asn Tyr Gln Pro Pro Thr Val Val Pro Gly Gly Asp	
352 357 362 367	
ctg gcc aag gtg cag cgg gcc gtc tgc atg ctc agc aac acc acg gcc	1273
Leu Ala Lys Val Gln Arg Ala Val Cys Met Leu Ser Asn Thr Thr Ala	
368 373 378 383	
att gcg gag gcc tgg gcc cgc ctc gac cac aag ttc gac ctc atg tac	1321
Ile Ala Glu Ala Trp Ala Arg Leu Asp His Lys Phe Asp Leu Met Tyr	
384 389 394 399	
gcc aag cgg gcc ttt gtg cat tgg tat gtg gga gag ggg atg gaa gaa	1369
Ala Lys Arg Ala Phe Val His Trp Tyr Val Gly Glu Gly Met Glu Glu	
400 405 410 415	
gga gaa ttt tct gag gcc agg gaa gac tta gct gcc ctg gag aag gat	1417

Gly Glu Phe Ser Glu Ala Arg Glu Asp Leu Ala Ala Leu Glu Lys Asp
 416 421 426 431

tat gaa gaa gtg ggg act gat tcg ttt gaa gaa gaa aat gaa ggg gag 1465
 Tyr Glu Glu Val Gly Thr Asp Ser Phe Glu Glu Glu Asn Glu Gly Glu
 432 437 442 447

gaa ttt taa atatatacct tccccttgaa aaaaaaaat 1503
 Glu Phe *
 448

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 Met Asp Glu
 1

gat tct tcg ttg aga gat tat act gta agc ttg gac tct gac atg gat 165
 Asp Ser Ser Leu Arg Asp Tyr Thr Val Ser Leu Asp Ser Asp Met Asp
 4 9 14 19

gat gca tct aaa ttt ctt cag gat tat gat att cga act ggc aac acc 213
 Asp Ala Ser Lys Phe Leu Gln Asp Tyr Asp Ile Arg Thr Gly Asn Thr
 20 25 30 35

agg gaa gct ttg agt cct tgt cca agt act gta agt acc aag tct cag 261
 Arg Glu Ala Leu Ser Pro Cys Pro Ser Thr Val Ser Thr Lys Ser Gln
 36 41 46 51

cca ggc agc agt gct tct tct agt tct gga gtt aaa atg acc agc ttt 309
 Pro Gly Ser Ser Ala Ser Ser Ser Ser Gly Val Lys Met Thr Ser Phe
 52 57 62 67

gct gaa caa aaa ttc agg aaa ctg aat cat acc gat gga aaa agt agt 357
 Ala Glu Gln Lys Phe Arg Lys Leu Asn His Thr Asp Gly Lys Ser Ser
 68 73 78 83

gga agc agt tct caa aaa act aca cca gaa ggc tct gaa ctt aat att 405
 Gly Ser Ser Ser Gln Lys Thr Thr Pro Glu Gly Ser Glu Leu Asn Ile
 84 89 94 99

cct cat gtg gtt gct tgg gca caa att cca gaa gaa aca ggg ctt cca 453
 Pro His Val Val Ala Trp Ala Gln Ile Pro Glu Glu Thr Gly Leu Pro

100	105	110	115	
cag gga cgg gac act	acc cag ctg ttg gcc tct	gaa atg gtg cat ctt	501	
Gln Gly Arg Asp Thr	Thr Gln Leu Leu Ala Ser	Glu Met Val His Leu		
116	121	126	131	
agg atg aaa cta gaa	gaa aag agg cgt gct	ata gaa gcc cag aaa aag	549	
Arg Met Lys Leu Glu	Glu Lys Arg Arg Ala Ile	Glu Ala Gln Lys Lys		
132	137	142	147	
aaa atg gaa gct gct	ttt acc aaa cag aga	cag aaa atg gga agg aca	597	
Lys Met Glu Ala Ala	Phe Thr Lys Gln Arg	Gln Lys Met Gly Arg Thr		
148	153	158	163	
gca ttc ctt act gta	gtg aaa aag aaa ggg	gat ggg ata tct cct cta	645	
Ala Phe Leu Thr Val	Val Lys Lys Lys Gly	Asp Gly Ile Ser Pro Leu		
164	169	174	179	
cga gag gaa gcg gcg	ggt gca gaa gat gag	aaa gta tat act gat cga	693	
Arg Glu Glu Ala Ala	Gly Ala Glu Asp Glu	Lys Val Tyr Thr Asp Arg		
180	185	190	195	
gca aaa gaa aag gaa	tca caa aaa act gat	gga caa agg agc aag tca	741	
Ala Lys Glu Lys Glu	Ser Gln Lys Thr Asp	Gly Gln Arg Ser Lys Ser		
196	201	206	211	
ctg gca gat ata aaa	gag agc atg gag aat	cct caa gcc aaa tgg cta	789	
Leu Ala Asp Ile Lys	Glu Ser Met Glu Asn	Pro Gln Ala Lys Trp Leu		
212	217	222	227	
aag tct cca act aca	cct att gat cct gag	aag cag tgg aac ctg gca	837	
Lys Ser Pro Thr Thr	Pro Ile Asp Pro Glu	Lys Gln Trp Asn Leu Ala		
228	233	238	243	
agc ccc tca gaa gaa	act tta aat gaa gga	gag att tta gaa tat acc	885	
Ser Pro Ser Glu Glu	Thr Leu Asn Glu Gly	Glu Ile Leu Glu Tyr Thr		
244	249	254	259	
aaa tcc att gaa aag	tta aat tca tcc ctg	cat ttt cta caa caa gaa	933	
Lys Ser Ile Glu Lys	Leu Asn Ser Ser Leu	His Phe Leu Gln Gln Glu		
260	265	270	275	
atg caa cgc ttg tca	ctt cag cag gag atg	tta atg cag atg aga gag	981	
Met Gln Arg Leu Ser	Leu Gln Gln Glu Met	Leu Met Gln Met Arg Glu		
276	281	286	291	
caa caa tct tgg gtg	att tca cct cca caa	ccc tct cca cag aaa cag	1029	
Gln Gln Ser Trp Val	Ile Ser Pro Pro Gln	Pro Ser Pro Gln Lys Gln		
292	297	302	307	
att cga gat ttt aag	cct tct aag cag gca	ggc ctg tca tca gcc att	1077	
Ile Arg Asp Phe Lys	Pro Ser Lys Gln Ala	Gly Leu Ser Ser Ala Ile		
308	313	318	323	
gca cca ttc tcc tca	gac tcc cct cgt cct	act cac cca tct cca cag	1125	
Ala Pro Phe Ser Ser	Asp Ser Pro Arg Pro	Thr His Pro Ser Pro Gln		
324	329	334	339	

tct tct aac agg aaa agt gca tct ttt tct gtt aaa agt caa agg act	1173
Ser Ser Asn Arg Lys Ser Ala Ser Phe Ser Val Lys Ser Gln Arg Thr	
340 345 350 355	
cct agg cca aat gag tta aaa ata aca cct ttg aat cga acc ttg aca	1221
Pro Arg Pro Asn Glu Leu Lys Ile Thr Pro Leu Asn Arg Thr Leu Thr	
356 361 366 371	
cct cct cgg tct gtg gat agc ctt cct cgg tta agg agg ttt tca cca	1269
Pro Pro Arg Ser Val Asp Ser Leu Pro Arg Leu Arg Arg Phe Ser Pro	
372 377 382 387	
agt caa gtt cct att caa act agg tca ttt gta tgt ttt ggg gat gat	1317
Ser Gln Val Pro Ile Gln Thr Arg Ser Phe Val Cys Phe Gly Asp Asp	
388 393 398 403	
gga gaa cct cag tta aag gaa tcc aaa cct aaa gag gaa gtt aaa aag	1365
Gly Glu Pro Gln Leu Lys Glu Ser Lys Pro Lys Glu Glu Val Lys Lys	
404 409 414 419	
gag gaa ttg gaa tcc aaa ggg act ttg gaa cag cgt gga cat aat cca	1413
Glu Glu Leu Glu Ser Lys Gly Thr Leu Glu Gln Arg Gly His Asn Pro	
420 425 430 435	
gaa gaa aag gaa atc aaa cct ttt gag tca aca gtc tct gaa gtc cta	1461
Glu Glu Lys Glu Ile Lys Pro Phe Glu Ser Thr Val Ser Glu Val Leu	
436 441 446 451	
tca ctg cct gtc aca gag act gta tgt ctg aca cca aat gag gac caa	1509
Ser Leu Pro Val Thr Glu Thr Val Cys Leu Thr Pro Asn Glu Asp Gln	
452 457 462 467	
ttg aat caa ccc aca gaa ccc cct cct aaa ccc gtt ttc cca ccc act	1557
Leu Asn Gln Pro Thr Glu Pro Pro Pro Lys Pro Val Phe Pro Pro Thr	
468 473 478 483	
gct cca aaa aat gtt aat ctg att gaa gtt tcc ctc tca gat ttg aaa	1605
Ala Pro Lys Asn Val Asn Leu Ile Glu Val Ser Leu Ser Asp Leu Lys	
484 489 494 499	
ccc cct gaa aag gct gat gta cct gtt gaa aaa tat gat gga gaa agt	1653
Pro Pro Glu Lys Ala Asp Val Pro Val Glu Lys Tyr Asp Gly Glu Ser	
500 505 510 515	
gat aaa gaa caa ttt gat gat gac cag aaa gta tgc tgt gga ttc ttt	1701
Asp Lys Glu Gln Phe Asp Asp Asp Gln Lys Val Cys Cys Gly Phe Phe	
516 521 526 531	
ttt aag gat gat caa aaa gca gaa aat gat atg gca atg aaa cgg gca	1749
Phe Lys Asp Asp Gln Lys Ala Glu Asn Asp Met Ala Met Lys Arg Ala	
532 537 542 547	
gct ttg ttg gag aaa aga tta aga agg gaa aag gaa act cag ctc cgg	1797
Ala Leu Leu Glu Lys Arg Leu Arg Arg Glu Lys Glu Thr Gln Leu Arg	
548 553 558 563	

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cgt aaa act gag gaa gaa cgt cag aag aaa gaa gat gag aga gca cgc Arg Lys Thr Glu Glu Glu Arg Gln Lys Lys Glu Asp Glu Arg Ala Arg 580 585 590 595	1893
aga gaa ttt att agg caa gaa tat atg agg cgg aaa caa ctg aaa cta Arg Glu Phe Ile Arg Gln Glu Tyr Met Arg Arg Lys Gln Leu Lys Leu 596 601 606 611	1941
atg gaa gat atg gat aca gta att aaa ccc cgt cct caa gta gta aaa Met Glu Asp Met Asp Thr Val Ile Lys Pro Arg Pro Gln Val Val Lys 612 617 622 627	1989
caa aaa aaa cag cga cca aaa tct att cac aga gat cat att gaa tcc Gln Lys Lys Gln Arg Pro Lys Ser Ile His Arg Asp His Ile Glu Ser 628 633 638 643	2037
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agt cga aat gga gaa aaa gac tgg gag aat gca tca aca act tct tca Ser Arg Asn Gly Glu Lys Asp Trp Glu Asn Ala Ser Thr Thr Ser Ser 692 697 702 707	2229
gtg gct tct gga aca gaa tat aca gga cca aag ctc tac aaa gaa ccc Val Ala Ser Gly Thr Glu Tyr Thr Gly Pro Lys Leu Tyr Lys Glu Pro 708 713 718 723	2277
agt gca aaa tcc aat aag cac ata ata caa aat gct tta gct cat tgc Ser Ala Lys Ser Asn Lys His Ile Ile Gln Asn Ala Leu Ala His Cys 724 729 734 739	2325
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gaa atg gag aaa tca gat gcc aac aac ttc tta atc ttg ttc cgg gat Glu Met Glu Lys Ser Asp Ala Asn Asn Phe Leu Ile Leu Phe Arg Asp 756 761 766 771	2421
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Glu Ile Asn Lys Leu	Thr Gly Ile Gly Pro Lys	Ser Ile Thr Lys Lys				
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Met Ile Glu Gly Leu	Tyr Lys Tyr Asn Ser	Asp Arg Lys Gln Phe	Ser			
804	809	814	819			
cac ata ccc gct aaa	act tta tct gcc agt	gtt gat gca att acc	att	2613		
His Ile Pro Ala Lys	Thr Leu Ser Ala Ser	Val Asp Ala Ile Thr	Ile			
820	825	830	835			
cat agc cat tta tgg	cag acc aaa aga cca	gta aca ccc aaa aaa	ctt	2661		
His Ser His Leu Trp	Gln Thr Lys Arg Pro	Val Thr Pro Lys Lys	Leu			
836	841	846	851			
tta ccc act aag gca	tag aagttg ggaaatactt	gcttcagaac attcatggta		2715		
Leu Pro Thr Lys Ala	*					
852	857					
aatttgcact	tcatctttcc	tgccatata	aaatctttct	aattgccaac	aagactttta	2775
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gatttagttc ttgggttttc cgttttgat tagaatgact gttacagttt tatttggtgtg	5115
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<400> 66

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ccgccgcccc gacccgcgcc ccgccggggc agcggtggtg agagccccga ctccccggac      180
gccgccccgc gtgcc atg ggg ttc ccg gcc gcg gcg ctg ctc tgc gcg ctg      231
          Met Gly Phe Pro Ala Ala Ala Leu Leu Cys Ala Leu
                1                5                10

tgc tgc ggc ctc ctg gcc ccg gct gcc cgc gcc ggc tac tcc gag gag      279
Cys Cys Gly Leu Leu Ala Pro Ala Ala Arg Ala Gly Tyr Ser Glu Glu
    13                18                23                28

cgc tgc agc tgg agg ggc agc ggc ctc acc cag gag ccc ggc agc gtg      327
Arg Cys Ser Trp Arg Gly Ser Gly Leu Thr Gln Glu Pro Gly Ser Val
    29                34                39                44

ggg cag ctg gcc ctg gcc tgt gcg gag ggc gcg gtt gag tgg ctg tac      375
Gly Gln Leu Ala Leu Ala Cys Ala Glu Gly Ala Val Glu Trp Leu Tyr
    45                50                55                60

ccg gct ggg gcg ctg cgc ctg acc ctg gcc ggc ccc gat ccc aga gcg      423
Pro Ala Gly Ala Leu Arg Leu Thr Leu Gly Gly Pro Asp Pro Arg Ala
    61                66                71                76

cgg ccc ggc atc gcc tgt ctg cgg ccg gtg cgg ccc ttc gcg ggc gcc      471
Arg Pro Gly Ile Ala Cys Leu Arg Pro Val Arg Pro Phe Ala Gly Ala
    77                82                87                92

cag gtc ttc gcg gag cgc gca ggg ggc gcc ctg gag ctg ctg ctg gct      519
Gln Val Phe Ala Glu Arg Ala Gly Gly Ala Leu Glu Leu Leu Leu Ala
    93                98                103                108

gag ggc ccg ggc ccg gca ggg ggc cgc tgc gtg cgc tgg ggt ccc cgc      567
Glu Gly Pro Gly Pro Ala Gly Gly Arg Cys Val Arg Trp Gly Pro Arg
   109                114                119                124

gag cgc cgg gcc ctc ttc ctg cag gcc acg ccg cac cag gac atc agc      615
Glu Arg Arg Ala Leu Phe Leu Gln Ala Thr Pro His Gln Asp Ile Ser
   125                130                135                140

cgc cgc gtg gcc gcc ttc cgc ttt gag ctg cgc gag gac ggg cgc ccc      663
Arg Arg Val Ala Ala Phe Arg Phe Glu Leu Arg Glu Asp Gly Arg Pro
   141                146                151                156

gag ctg ccc ccg cag gcc cac ggt ctc ggc gta gac ggt gcc tgc agg      711
Glu Leu Pro Pro Gln Ala His Gly Leu Gly Val Asp Gly Ala Cys Arg
   157                162                167                172

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Pro Cys Ser Asp Ala Glu Leu Leu Leu Ala Ala Cys Thr Ser Asp Phe	
173 178 183 188	
gta att cac ggg atc atc cat ggg gtc acc cat gac gtg gag ctg cag	807
Val Ile His Gly Ile Ile His Gly Val Thr His Asp Val Glu Leu Gln	
189 194 199 204	
gag tct gtc atc act gtg gtg gcc gcc cgt gtc ctc cgc cag aca ccg	855
Glu Ser Val Ile Thr Val Val Ala Ala Arg Val Leu Arg Gln Thr Pro	
205 210 215 220	
ccg ctg ttc cag gcg ggg cga tcc ggg gac cag ggg ctg acc tcc att	903
Pro Leu Phe Gln Ala Gly Arg Ser Gly Asp Gln Gly Leu Thr Ser Ile	
221 226 231 236	
cgt acc cca ctg cgc tgt ggc gtc cac ccg ggc cca ggc acc ttc ctc	951
Arg Thr Pro Leu Arg Cys Gly Val His Pro Gly Pro Gly Thr Phe Leu	
237 242 247 252	
ttc atg ggc tgg agc cgc ttt ggg gag gcc cgg ctg ggc tgt gcc cca	999
Phe Met Gly Trp Ser Arg Phe Gly Glu Ala Arg Leu Gly Cys Ala Pro	
253 258 263 268	
cga ttc cag gag ttc cgc cgt gcc tac gag gct gcc cgt gct gcc cac	1047
Arg Phe Gln Glu Phe Arg Arg Ala Tyr Glu Ala Ala Arg Ala Ala His	
269 274 279 284	
ctc cac ccc tgc gag gtg gcg ctg cac tga g gggctgggtg ctggggaggg	1098
Leu His Pro Cys Glu Val Ala Leu His *	
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accgacacga ccattcatttg tcgacgccgc tgccaccgcc tgccctgagag aagtcgctcg	180
ggccgacccc gtcgcctccg ccggctacc atg tcc gcc cag gcg cag atg cgg	233
Met Ser Ala Gln Ala Gln Met Arg	
1 5	
gcc ctg ctg gac cag ctc atg ggc acg gct cgg gac gac gaa acc aga	281
Ala Leu Leu Asp Gln Leu Met Gly Thr Ala Arg Asp Asp Glu Thr Arg	
9 14 19 24	
cag agg gtc aag ttt aca gat gac cgt gtc tgc aag agt cac ctt ctg	329
Gln Arg Val Lys Phe Thr Asp Asp Arg Val Cys Lys Ser His Leu Leu	
25 30 35 40	
gac tgc tgc ccc cat gac atc ctg gct ggg acg cgc atg gat tta gga	377
Asp Cys Cys Pro His Asp Ile Leu Ala Gly Thr Arg Met Asp Leu Gly	
41 46 51 56	
gaa tgt acc aaa atc cac gac ttg gcc ctc cga gca gat tat gag att	425
Glu Cys Thr Lys Ile His Asp Leu Ala Leu Arg Ala Asp Tyr Glu Ile	
57 62 67 72	
gca agt aaa gaa aga gac ctg ttt ttt gaa tta gat gca atg gat cac	473
Ala Ser Lys Glu Arg Asp Leu Phe Phe Glu Leu Asp Ala Met Asp His	
73 78 83 88	
ttg gag tcc ttt att gct gaa tgt gat cgg aga act gag ctc gcc aag	521
Leu Glu Ser Phe Ile Ala Glu Cys Asp Arg Arg Thr Glu Leu Ala Lys	
89 94 99 104	
aag cgg ctg gca gaa aca cag gag gaa atc agt gcg gaa gtt tct gca	569
Lys Arg Leu Ala Glu Thr Gln Glu Glu Ile Ser Ala Glu Val Ser Ala	
105 110 115 120	
aag gca gaa aaa gta cat gag tta aat gaa gaa ata gga aaa ctc ctt	617
Lys Ala Glu Lys Val His Glu Leu Asn Glu Glu Ile Gly Lys Leu Leu	
121 126 131 136	
gct aaa gcc gaa cag cta ggg gct gaa ggt aat gtg gat gaa tcc cag	665
Ala Lys Ala Glu Gln Leu Gly Ala Glu Gly Asn Val Asp Glu Ser Gln	
137 142 147 152	
aag att ctt atg gaa gtg gaa aaa gtt cgt gcg aag aaa aaa gaa gct	713
Lys Ile Leu Met Glu Val Glu Lys Val Arg Ala Lys Lys Lys Glu Ala	
153 158 163 168	
gag gaa gaa tac aga aat tcc atg cct gca tcc agt ttt cag cag caa	761
Glu Glu Glu Tyr Arg Asn Ser Met Pro Ala Ser Ser Phe Gln Gln Gln	
169 174 179 184	
aag ctg cgt gtc tgc gag gtc tgt tca gcc tac ctt ggt ctc cat gac	809
Lys Leu Arg Val Cys Glu Val Cys Ser Ala Tyr Leu Gly Leu His Asp	
185 190 195 200	
aat gac cgt cgc ctg gca gac cac ttc ggt ggc aag tta cac ttg ggg	857

Asn Asp Arg Arg Leu Ala Asp His Phe Gly Gly Lys Leu His Leu Gly	
201 206 211 216	
ttc att cag atc cga gag aag ctt gat cag ttg agg aaa act gtc gct	905
Phe Ile Gln Ile Arg Glu Lys Leu Asp Gln Leu Arg Lys Thr Val Ala	
217 222 227 232	
gaa aag cag gag aag aga aat cag gat cgc ttg agg agg aga gag gag	953
Glu Lys Gln Glu Lys Arg Asn Gln Asp Arg Leu Arg Arg Arg Glu Glu	
233 238 243 248	
agg gaa cgg gag gag cgt ctg agc agg agg tcg gga tca aga acc aga	1001
Arg Glu Arg Glu Glu Arg Leu Ser Arg Arg Ser Gly Ser Arg Thr Arg	
249 254 259 264	
gat cgc agg agg tca cgc tcc cgg gat cgg cgt cgg agg cgg tca aga	1049
Asp Arg Arg Arg Ser Arg Ser Arg Asp Arg Arg Arg Arg Ser Arg	
265 270 275 280	
tct acc tcc cga gag cga cgg aaa ttg tcc cgg tcc cgg tcc cga gat	1097
Ser Thr Ser Arg Glu Arg Arg Lys Leu Ser Arg Ser Arg Ser Arg Asp	
281 286 291 296	
aga cat cgg cgc cac cgc agc cgt tcc cgg agc cac agc cgg gga cat	1145
Arg His Arg Arg His Arg Ser Arg Ser Arg Ser His Ser Arg Gly His	
297 302 307 312	
cgt cgg gct tcc cgg gac cga agt gcg aaa tac aag ttc tcc aga gag	1193
Arg Arg Ala Ser Arg Asp Arg Ser Ala Lys Tyr Lys Phe Ser Arg Glu	
313 318 323 328	
cgg gca tcc aga gag gag tcc tgg gag agc ggg cgg agc gag cga ggg	1241
Arg Ala Ser Arg Glu Glu Ser Trp Glu Ser Gly Arg Ser Glu Arg Gly	
329 334 339 344	
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Pro Pro Asp Trp Arg Leu Glu Ser Ser Asn Gly Lys Met Ala Ser Arg	
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Arg Ser Glu Glu Lys Glu Ala Gly Glu Ile *	
361 366 371	
gtaaatagtc tgataaacgt tcacacagtc taaaattacc ctttatattt gctgaataca	1400
actcatcttt tgtagtttaa aatttctatt gttttggagc tagctgtgag tttctagaag	1460
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<220>

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accgacacga ccatcatttg tcgacgccgc tgccaccgcc tgccctgagag aagtcgtcgc 180

ggccgacccc gtcgcctcgc ccggctacc atg tcc gcc cag gcg cag atg cgg 233

Met Ser Ala Gln Ala Gln Met Arg

1

5

gcc ctg ctg gac cag ctc atg ggc acg gct cgg gac gac gaa acc aga 281

Ala Leu Leu Asp Gln Leu Met Gly Thr Ala Arg Asp Asp Glu Thr Arg

9

14

19

24

cag agg gtc aag ttt aca gat gac cgt gtc tgc aag agt cac ctt ctg 329

Gln Arg Val Lys Phe Thr Asp Asp Arg Val Cys Lys Ser His Leu Leu

25

30

35

40

gac tgc tgc ccc cat gac atc ctg gct ggg acg cgc atg gat tta gga 377

Asp Cys Cys Pro His Asp Ile Leu Ala Gly Thr Arg Met Asp Leu Gly

41

46

51

56

gaa tgt acc aaa atc cac gac ttg gcc ctc cga gca gat tat gag att 425

Glu Cys Thr Lys Ile His Asp Leu Ala Leu Arg Ala Asp Tyr Glu Ile

57

62

67

72

gca agt aaa gaa aga gac ctg ttt ttt gaa tta gat gca atg gat cac 473

Ala Ser Lys Glu Arg Asp Leu Phe Phe Glu Leu Asp Ala Met Asp His

73

78

83

88

ttg gag tcc ttt att gct gaa tgt gat cgg aga act gag ctc gcc aag 521

Leu Glu Ser Phe Ile Ala Glu Cys Asp Arg Arg Thr Glu Leu Ala Lys

89

94

99

104

aag cgg ctg gca gaa aca cag gag gaa atc agt gcg gaa gtt tct gca 569

Lys Arg Leu Ala Glu Thr Gln Glu Glu Ile Ser Ala Glu Val Ser Ala

105

110

115

120

aag gca gaa aaa gta cat gag tta aat gaa gaa ata gga aaa ctc ctt 617

Lys Ala Glu Lys Val His Glu Leu Asn Glu Glu Ile Gly Lys Leu Leu

121

126

131

136

gct aaa gcc gaa cag cta ggg gct gaa ggt aat gtg gat gaa tcc cag 665

Ala Lys Ala Glu Gln Leu Gly Ala Glu Gly Asn Val Asp Glu Ser Gln

137

142

147

152

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Lys Ile Leu Met Glu Val Glu Lys Val Arg Ala Lys Lys Lys Glu Ala	
153 158 163 168	
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Glu Lys Thr Val Ala Glu Lys Gln Glu Lys Arg Asn Gln Asp Arg Leu	
169 174 179 184	
agg agg aga gag gag agg gaa cgg gag gag cgt ctg agc agg agg tcg	809
Arg Arg Arg Glu Glu Arg Glu Arg Glu Glu Arg Leu Ser Arg Arg Ser	
185 190 195 200	
gga tca aga acc aga gat cgc agg agg tca cgc tcc cgg gat cgg cgt	857
Gly Ser Arg Thr Arg Asp Arg Arg Arg Ser Arg Ser Arg Asp Arg Arg	
201 206 211 216	
cgg agg cgg tca aga tct acc tcc cga gag cga cgg aaa ttg tcc cgg	905
Arg Arg Arg Ser Arg Ser Thr Ser Arg Glu Arg Arg Lys Leu Ser Arg	
217 222 227 232	
tcc cgg tcc cga gat aga cat cgg cgc cac cgc agc cgt tcc cgg agc	953
Ser Arg Ser Arg Asp Arg His Arg Arg His Arg Ser Arg Ser Arg Ser	
233 238 243 248	
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His Ser Arg Gly His Arg Arg Ala Ser Arg Asp Arg Ser Ala Lys Tyr	
249 254 259 264	
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Lys Phe Ser Arg Glu Arg Ala Ser Arg Glu Glu Ser Trp Glu Ser Gly	
265 270 275 280	
cgg agc gag cga ggg ccc ccg gac tgg agg ctt gag agc tcc aac ggg	1097
Arg Ser Glu Arg Gly Pro Pro Asp Trp Arg Leu Glu Ser Ser Asn Gly	
281 286 291 296	
aag atg gct tca cgg agg tca gaa gag aag gag gcc ggc gag atc tga	1145
Lys Met Ala Ser Arg Arg Ser Glu Glu Lys Glu Ala Gly Glu Ile *	
297 302 307 312	
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gctgtgagtt tctagaagtg tacagagttg ctctgtgtt cccgggtcat gttgagtagg	1325
aataaataaa tctgatgctg cctctgaaa aaaaaaaa	1363

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 Ala Gln Gly Ala Ala Ala Ala Gly Ser Glu Pro Pro Pro Ala Thr Thr
 9 14 19 24

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 Ser Pro Glu Gly Gln Pro Lys Val His Arg Ala Arg Lys Thr Met Ser
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 Lys Pro Gly Asn Gly Gln Pro Pro Val Pro Glu Lys Arg Pro Pro Glu
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ata cag cat ttc cgc atg agt gat gat gtc cac tca ctg gga aag gtg 245
 Ile Gln His Phe Arg Met Ser Asp Asp Val His Ser Leu Gly Lys Val
 57 62 67 72

acc tca gat ctg gcc aaa agg agg aag ctg aac tca gga ggt ggc ctg 293
 Thr Ser Asp Leu Ala Lys Arg Arg Lys Leu Asn Ser Gly Gly Gly Leu
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tcg gag gag tta ggt tct gcc cgg cgt tca gga gaa gtg acc ctg acg 341
 Ser Glu Glu Leu Gly Ser Ala Arg Arg Ser Gly Glu Val Thr Leu Thr
 89 94 99 104

aaa ggg gac ccc ggg tcc ctg gag gag tgg gag acg gtg gtg ggt gat 389
 Lys Gly Asp Pro Gly Ser Leu Glu Glu Trp Glu Thr Val Val Gly Asp
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gac ttc agt ctc tac tat gat tcc tac tct gtg gat gag cgc gtg gac 437
 Asp Phe Ser Leu Tyr Tyr Asp Ser Tyr Ser Val Asp Glu Arg Val Asp
 121 126 131 136

tcc gac agc aag tct gaa gtt gaa gct cta act gaa caa cta agt gaa 485
 Ser Asp Ser Lys Ser Glu Val Glu Ala Leu Thr Glu Gln Leu Ser Glu
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gaa gag gaa gaa gaa gag gaa gat gag gag tca ggg aat cag tca gat 581
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 169 174 179 184

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 Arg Ser Gly Ser Ser Gly Arg Arg Lys Ala Lys Lys Lys Trp Arg Lys
 185 190 195 200

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Asp Ser Pro Trp Val Lys Pro Ser Arg Lys Arg Arg Lys Arg Glu Pro	
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Pro Arg Ala Lys Glu Pro Arg Gly Val Asn Gly Val Gly Ser Ser Gly	
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Pro Ser Glu Tyr Met Glu Val Pro Leu Gly Ser Leu Glu Leu Pro Ser	
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Lys Cys Met Ala Thr Glu Ser Val Asp Gly Glu Leu Ser Gly Cys Asn	
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Ala Ala Ile Leu Lys Arg Glu Thr Met Arg Pro Ser Ser Arg Val Ala	
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ctg atg gtg ctc tgt gag acc cac cgc gcc cgc atg gtc aaa cac cac	1061
Leu Met Val Leu Cys Glu Thr His Arg Ala Arg Met Val Lys His His	
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Cys Cys Pro Gly Cys Gly Tyr Phe Cys Thr Ala Gly Thr Phe Leu Glu	
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Cys His Pro Asp Phe Arg Val Ala His Arg Phe His Lys Ala Cys Val	
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Pro Ala Gly Thr Ala Ala Pro Ala Pro Pro Pro Leu Ser Gln Asp Val	
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Pro Gly Arg Ala Asp Thr Ser Gln Pro Ser Ala Arg Met Arg Gly His	
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Gly Glu Pro Arg Arg Pro Pro Cys Asp Pro Leu Ala Asp Thr Ile Asp	
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Gln Leu Tyr Leu Ser Val Lys Gln Gly Glu Leu Gln Lys Val Ile Leu	
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atg ctg ttg gac aac ctg gac ccc aac ttc cag agc gac cag cag agc	1637
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Cys His Val Leu Leu Gln Ala Gly Ala Asn Ile Asn Ala Val Asp Lys	
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Gln Gln Arg Thr Pro Leu Met Glu Ala Val Val Asn Asn His Leu Glu	
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574	579
gta gcc cgt tac atg gtg cag cgt ggt ggc tgt gtc tat agc aag gag	1829
Val Ala Arg Tyr Met Val Gln Arg Gly Gly Cys Val Tyr Ser Lys Glu	
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gag gac ggt tcc acc tgc ctc cac cac gca gcc aaa atc ggg aac ttg	1877
Glu Asp Gly Ser Thr Cys Leu His His Ala Ala Lys Ile Gly Asn Leu	
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Glu Met Val Ser Leu Leu Leu Ser Thr Gly Gln Val Asp Val Asn Ala	
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622	627
cag gac agt ggg ggg tgg acg ccc atc atc tgg gct gca gag cac aag	1973
Gln Asp Ser Gly Gly Trp Thr Pro Ile Ile Trp Ala Ala Glu His Lys	
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638	643
cac atc gag gtg atc cgc atg cta ctg acg cgg ggc gcc gac gtc acc	2021
His Ile Glu Val Ile Arg Met Leu Leu Thr Arg Gly Ala Asp Val Thr	

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ctc act gac aac gag	gag aac atc tgc ctg	cac tgg gcc tcc ttc acg		2069
Leu Thr Asp Asn Glu	Glu Asn Ile Cys Leu	His Trp Ala Ser Phe Thr		
665	670	675	680	
ggc agc gcc gcc atc	gcc gaa gtc ctt ctg	aat gcg cgc tgt gac ctc		2117
Gly Ser Ala Ala Ile	Ala Glu Val Leu Leu	Asn Ala Arg Cys Asp Leu		
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cat gct gtc aac tac	cat ggg gac acc ccc	ctg cac atc gca gct cgg		2165
His Ala Val Asn Tyr	His Gly Asp Thr Pro	Leu His Ile Ala Ala Arg		
697	702	707	712	
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Glu Ser Tyr His Asp	Cys Val Leu Leu Phe	Leu Ser Arg Gly Ala Asn		
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cct gag ctg cgg aac	aaa gag ggg gac aca	gca tgg gac ctg act ccc		2261
Pro Glu Leu Arg Asn	Lys Glu Gly Asp Thr	Ala Trp Asp Leu Thr Pro		
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Glu Arg Ser Asp Val	Trp Phe Ala Leu Gln	Leu Asn Arg Lys Leu Arg		
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ctt ggg gtg gga aat	cgg gcc atc cgc aca	gag aag atc atc tgc cgg		2357
Leu Gly Val Gly Asn	Arg Ala Ile Arg Thr	Glu Lys Ile Ile Cys Arg		
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gac gtg gct cgg ggc	tat gag aac gtg ccc	att ccc tgt gtc aac ggt		2405
Asp Val Ala Arg Gly	Tyr Glu Asn Val Pro	Ile Pro Cys Val Asn Gly		
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gtg gat ggg gag ccc	tgc cct gag gat tac	aag tac atc tca gag aac		2453
Val Asp Gly Glu Pro	Cys Pro Glu Asp Tyr	Lys Tyr Ile Ser Glu Asn		
793	798	803	808	
tgc gag acg tcc acc	atg aac atc gat cgc	aac atc acc cac ctg cag		2501
Cys Glu Thr Ser Thr	Met Asn Ile Asp Arg	Asn Ile Thr His Leu Gln		
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cac tgc acg tgt gtg	gac gac tgc tct agc	tcc aac tgc ctg tgc ggc		2549
His Cys Thr Cys Val	Asp Asp Cys Ser Ser	Ser Asn Cys Leu Cys Gly		
825	830	835	840	
cag ctc agc atc cgg	tgc tgg tat gac aag	gat ggg cga ttg ctc cag		2597
Gln Leu Ser Ile Arg	Cys Trp Tyr Asp Lys	Asp Gly Arg Leu Leu Gln		
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gaa ttt aac aag att	gag cct ccg ctg att	ttc gag tgt aac cag gcg		2645
Glu Phe Asn Lys Ile	Glu Pro Pro Leu Ile	Phe Glu Cys Asn Gln Ala		
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Cys Ser Cys Trp Arg	Asn Cys Lys Asn Arg	Val Val Gln Ser Gly Ile		
873	878	883	888	

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Gly Glu Leu Ile Ser Asp Ala Glu Ala Asp Val Arg Glu Asp Asp Ser
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ccc aac atc att ccc gtc cgg gtc ttc atg ctg cac caa gac ctg cga 2981
Pro Asn Ile Ile Pro Val Arg Val Phe Met Leu His Gln Asp Leu Arg
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Tyr Phe Thr Cys Gln Cys Gly Ser Glu Lys Cys Lys His Ser Ala Glu
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Ala Ile Ala Leu Glu Gln Ser Arg Leu Ala Arg Leu Asp Pro His Pro
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Glu Leu Leu Pro Glu Leu Gly Ser Leu Pro Pro Val Asn Thr *
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9					14					19					24	
tca	ccc	gat	gga	aga	cta	att	gtg	tca	tgt	agt	gag	gat	aaa	act	att	629
Ser	Pro	Asp	Gly	Arg	Leu	Ile	Val	Ser	Cys	Ser	Glu	Asp	Lys	Thr	Ile	
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aaa	att	tgg	gat	acc	aca	aat	aag	caa	tgt	gtt	aat	aac	ttc	tca	gat	677
Lys	Ile	Trp	Asp	Thr	Thr	Asn	Lys	Gln	Cys	Val	Asn	Asn	Phe	Ser	Asp	
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Ser	Val	Gly	Phe	Ala	Asn	Phe	Val	Asp	Phe	Asn	Pro	Ser	Gly	Thr	Cys	
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Ile	Ala	Ser	Ala	Gly	Ser	Asp	Gln	Thr	Val	Lys	Val	Trp	Asp	Val	Arg	
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Cys Ile Ser Phe His Pro Ser Gly Asn Tyr Leu Ile Thr Ala Ser Ser	
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Tyr Pro Arg Thr Pro His Pro His Glu Glu Lys Val Glu Thr Val Glu	
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Ile Asn Pro Lys Leu Glu Val Ile Asp Leu Gln Ile Ser Thr Pro Pro	
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Gly Arg Thr Leu Pro Asp Lys Gly Glu Glu Ala Cys Gly Tyr Phe Leu	
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Asn Pro Ser Leu Met Ser Pro Glu Cys Leu Pro Thr Thr Thr Lys Lys	
265 270 275 280	
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Lys Thr Glu Asp Met Ser Asp Leu Pro Cys Glu Ser Gln Arg Ser Ile	
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ccttctgtcc ccaacttcca gttagccaaa atataaagaa ggcaaatcct gtactgttgg 240

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tgaaaaacaa tcctcacaca aagatactat caacaaatca cacaccaatt tatcttagaa 360

ggatcaagag atgaaaaaca gcaaaggata ttttcgtaat atgctagaat ctttgaatat 420

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5

10

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Phe His Met Ala Ile Gly Ile Ile Asn Trp Asn Thr Thr Ala Gly Leu	
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Ser Gly Thr Leu Tyr Pro Lys Val Pro Gln Lys Tyr Ile Leu Phe Asp	
32 37 42 47	

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Ser Val Ile Leu Leu Leu Gly Met Leu Arg Lys Ile Arg Gln Val Cys	
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Val His Tyr Trp Pro Gly Ala Val Ala His Ala Tyr Asn Pro Ser Thr	
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Ser Gly Gln Thr Trp Asn Gly Val Ala Val	His Glu Leu Gly Lys Glu			
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Asn Thr Tyr Glu Gly Leu Gln Glu Gln Leu	Ser Arg Asn Thr His Lys			
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Glu Thr Glu Pro Val Tyr Glu Arg Ala Val	Pro Thr Gln Gln Ile Leu			
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gct ttt cct gag caa aca aac acc aaa gac	tgg aca gtg aca cct gag	568		
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His Val Leu Pro Glu Ser Gln Ser Leu Leu	Thr Phe Glu Glu Val Ala			
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Met Tyr Phe Ser Gln Glu Glu Trp Glu Leu	Leu Asp Pro Thr Gln Lys			
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Ala Leu Tyr Asn Asp Val Met Gln Glu Asn	Tyr Glu Thr Val Ile Ser			
151 156 161 166				
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Gln Gly Glu Glu Pro Trp Val Gln Val Ser	Pro Glu Phe Lys Asp Ser			
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Ala Gly Lys Ser Pro Thr Gly Leu Lys Leu	Lys Asn Asp Thr Glu Asn			
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His Gln Pro Ala Ser Leu Ser Asp Leu Glu	Ile Gln Ala Ser Ala Gly			
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Val Ile Ser Lys Lys Ala Lys Val Lys Val	Pro Gln Lys Thr Ala Gly			
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Phe Pro Val Lys Lys Arg Lys Lys Leu Ser Thr Trp Lys Gln Glu Leu	
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Ile Lys His Gln Arg Ile His Thr Glu Glu Lys Pro Tyr Lys Cys Gln	
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Gln Cys Asp Lys Arg Phe Arg Trp Ser Ser Asp Leu Asn Lys His Leu	
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 Met Ala Gly Leu Gly
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 Phe Thr Ala Arg Phe Phe Lys Gln Pro Thr Phe Cys Ser His Cys Thr
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 Cys Glu Met Asn Val His Arg Arg Cys Val Arg Ser Val Pro Ser Leu
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Asp Glu Leu Tyr Ala Ile Lys Ile Leu Lys Lys Asp Val Ile Val Gln				
374	379	384	389	

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Cys Lys Glu Asn Val Phe Pro Gly Thr Thr Thr Arg Thr Phe Cys Gly	
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3 8 13 18

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Leu Ala Lys Asn Leu Gln Lys His Leu Pro Asn Cys Ser Val Ile Ser
19 24 29 34

cag gat gat ttc ttc aag cca gag tct gag ata gag aca gat aaa aat 440
Gln Asp Asp Phe Phe Lys Pro Glu Ser Glu Ile Glu Thr Asp Lys Asn
35 40 45 50

gga ttt ttg cag tac gat gtg ctt gaa gca ctt aac atg gaa aaa atg 488
Gly Phe Leu Gln Tyr Asp Val Leu Glu Ala Leu Asn Met Glu Lys Met
51 56 61 66

atg tca gcc att tcc tgc tgg atg gaa agc gca aga cac tct gtg gta 536
Met Ser Ala Ile Ser Cys Trp Met Glu Ser Ala Arg His Ser Val Val
67 72 77 82

tca aca gac cag gaa agt gct gag gaa att ccc att tta atc atc gaa 584
Ser Thr Asp Gln Glu Ser Ala Glu Glu Ile Pro Ile Leu Ile Ile Glu
83 88 93 98

ggg ttt ctt ctt ttt aat tat aag ccc ctt gac act ata tgg aat aga 632

Gly	Phe	Leu	Leu	Phe	Asn	Tyr	Lys	Pro	Leu	Asp	Thr	Ile	Trp	Asn	Arg	
99					104					109					114	
agc	tat	ttc	ctg	act	att	cca	tat	gaa	gaa	tgt	aaa	agg	agg	agg	agt	680
Ser	Tyr	Phe	Leu	Thr	Ile	Pro	Tyr	Glu	Glu	Cys	Lys	Arg	Arg	Arg	Ser	
115					120					125					130	
aca	agg	gtc	tat	cag	cct	cca	gac	tct	ccg	gga	tac	ttt	gat	ggc	cat	728
Thr	Arg	Val	Tyr	Gln	Pro	Pro	Asp	Ser	Pro	Gly	Tyr	Phe	Asp	Gly	His	
131					136					141					146	
gtg	tgg	ccc	atg	tat	cta	aag	tac	aga	caa	gaa	atg	cag	gac	atc	aca	776
Val	Trp	Pro	Met	Tyr	Leu	Lys	Tyr	Arg	Gln	Glu	Met	Gln	Asp	Ile	Thr	
147					152					157					162	
tgg	gaa	gtt	gtg	tac	ctg	gat	gga	aca	aaa	tct	gaa	gag	gac	ctc	ttt	824
Trp	Glu	Val	Val	Tyr	Leu	Asp	Gly	Thr	Lys	Ser	Glu	Glu	Asp	Leu	Phe	
163					168					173					178	
ttg	caa	gta	tat	gaa	gat	cta	ata	caa	gaa	cta	gca	aag	caa	aag	tgt	872
Leu	Gln	Val	Tyr	Glu	Asp	Leu	Ile	Gln	Glu	Leu	Ala	Lys	Gln	Lys	Cys	
179					184					189					194	
ttg	caa	gtg	aca	gca	taa	agacgg	aacacaacaa	atccttcctg	aagtgaatta							926
Leu	Gln	Val	Thr	Ala	*											
195					200											
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tgacagccat	tgtttcatat	gttttgatttt	tattgcacat	ggttttccca	acatgtggaa											1046
caataaatat	ccatgccaat	ggacaggact	gtaccttagc	aagttgctcc	ctctccaggg											1106
agcgcataga	tacagcagag	ctcacagtga	gtcagaaagt	ctccactttc	tgaacatagc											1166
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atcacatcc	aaaaaaaaaa	aa														1248

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 <213> Homo sapiens

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aaccaggag	gagcgtgggg aaaggggctg tgggcctctc ggggagcgag ctgcgggtag 180

cgggcgactg ggtacaggcg cgcgcttggc tgtcgccctct gccgctgtgt ttgggaggac 240

tcgaactggc gccaggaaat attaggaagc tgtgattttc aaagctaatt atg aaa 296
Met Lys
1

aca ttt atc att gga atc agt ggt gtg aca aac agt ggc aaa aca aca 344
Thr Phe Ile Ile Gly Ile Ser Gly Val Thr Asn Ser Gly Lys Thr Thr
3 8 13 18

ctg gct aag aat ttg cag aaa cac ctc cca aat tgc agt gtc ata tct 392
Leu Ala Lys Asn Leu Gln Lys His Leu Pro Asn Cys Ser Val Ile Ser
19 24 29 34

cag gat gat ttc ttc aag cca gag tct gag ata gag aca gat aaa aat 440
Gln Asp Asp Phe Phe Lys Pro Glu Ser Glu Ile Glu Thr Asp Lys Asn
35 40 45 50

gga ttt ttg cag tac gat gtg ctt gaa gca ctt aac atg gaa aaa atg 488
Gly Phe Leu Gln Tyr Asp Val Leu Glu Ala Leu Asn Met Glu Lys Met
51 56 61 66

atg tca gcc att tcc tgc tgg atg gaa agc gca aga cac tct gtg gta 536
Met Ser Ala Ile Ser Cys Trp Met Glu Ser Ala Arg His Ser Val Val
67 72 77 82

tca aca gac cag gaa agt gct gag gaa att ccc att tta atc atc gaa 584
Ser Thr Asp Gln Glu Ser Ala Glu Glu Ile Pro Ile Leu Ile Ile Glu
83 88 93 98

ggg ttt ctt ctt ttt aat tat aat aca agg gtc tat cag cct cca gac 632
Gly Phe Leu Leu Phe Asn Tyr Asn Thr Arg Val Tyr Gln Pro Pro Asp
99 104 109 114

tct ccg gga tac ttt gat ggc cat gtg tgg ccc atg tat cta aag tac 680
Ser Pro Gly Tyr Phe Asp Gly His Val Trp Pro Met Tyr Leu Lys Tyr
115 120 125 130

aga caa gaa atg cag gac atc aca tgg gaa gtt gtg tac ctg gat gga 728
Arg Gln Glu Met Gln Asp Ile Thr Trp Glu Val Val Tyr Leu Asp Gly
131 136 141 146

aca aaa tct gaa gag gac ctc ttt ttg caa gta tat gaa gat cta ata 776
Thr Lys Ser Glu Glu Asp Leu Phe Leu Gln Val Tyr Glu Asp Leu Ile
147 152 157 162

caa gaa cta gca aag caa aag tgt ttg caa gtg aca gca taa agacgga 825
Gln Glu Leu Ala Lys Gln Lys Cys Leu Gln Val Thr Ala *
163 168 173

acacaacaaa tccttcctga agtgaattag gaaactccaa ggagtaattt aagaaccttc 885

accaagatac aatgtatact gtggtacaat gacagccatt gtttcatatg tttgattttt 945

attgcacatg gttttcccaa catgtggaac aataaatatc catgccaatg gacaggactg 1005

taccttagca agttgctccc tctccagga ggcacatagat acagcagagc tcacagtga	1065
tcagaaagtc tccactttct gaacatagct ctataacaat gattgtcaaa ctttttctaac	1125
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 <213> Homo sapiens

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tttctgttaa caactgctct gaaaagaaga tatttttcaa cctgaacttg cagtagctag	180
tggagaggca ggaaaaagga aatgaaacag agacagaggg aagcctgagc caaaatagac	240
cttcccgaga gaggaggaag cccggagaga gacgcacggt cccctccccg cccctaggcc	300
gccgccccct ctctgccctc ggcgggcagc agggcgccgc gaccgggggc cggaaaggtg	360
ccaggggctc cgggcggccg ggcgggcgca caccatcccc gcggggcgcg cggagccggc	420
gacagcgcgc gagagggacc ggcggtggc ggcgggcgga ccgggatgga agggagcgcg	480
gtgactgtcc ttgagcgcg aggggcgagc tcgccggcg aggccgagca agcggaggca	540
ggagcgcgcg cgacggcggc ggcgggcgcg gcgccgagc acccgagggg gtccgagccc	600
cggcagccgg ccagccccgc gccacaaagg gagcgcccc gcccgccggc acccgccctc	660
ccttccca atg tcc tcg gcc atc gaa agg aag agc ctg gac cct tca gag	710
Met Ser Ser Ala Ile Glu Arg Lys Ser Leu Asp Pro Ser Glu	
1 5 10	
gaa cca gtg gat gag gtg ctg cag atc ccc cca tcc ctg ctg aca tgc	758
Glu Pro Val Asp Glu Val Leu Gln Ile Pro Pro Ser Leu Leu Thr Cys	
15 20 25 30	
ggc ggc tgc cag cag aac atc ggg gac cgc tac ttc ctg aag gcc atc	806
Gly Gly Cys Gln Gln Asn Ile Gly Asp Arg Tyr Phe Leu Lys Ala Ile	
31 36 41 46	
gac cag tac tgg cac gag gac tgc ctg agc tgc gac ctc tgt ggc tgc	854
Asp Gln Tyr Trp His Glu Asp Cys Leu Ser Cys Asp Leu Cys Gly Cys	
47 52 57 62	

cgg ctg ggt gag gtg ggg cgg cgc ctc tac tac aaa ctg ggc cgg aag	902
Arg Leu Gly Glu Val Gly Arg Arg Leu Tyr Tyr Lys Leu Gly Arg Lys	
63 68 73 78	
ctc tgc cgg aga gac tat ctc agg ctt ttt ggg caa gac ggt ctc tgc	950
Leu Cys Arg Arg Asp Tyr Leu Arg Leu Phe Gly Gln Asp Gly Leu Cys	
79 84 89 94	
gca tcc tgt gac aag cgg att cgt gcc tat gag atg aca atg cgg gtg	998
Ala Ser Cys Asp Lys Arg Ile Arg Ala Tyr Glu Met Thr Met Arg Val	
95 100 105 110	
aaa gac aaa gtg tat cac ctg gaa tgt ttc aag tgc gcc gcc tgt cag	1046
Lys Asp Lys Val Tyr His Leu Glu Cys Phe Lys Cys Ala Ala Cys Gln	
111 116 121 126	
aag cat ttc tgt gta ggt gac aga tac ctc ctc atc aac tct gac ata	1094
Lys His Phe Cys Val Gly Asp Arg Tyr Leu Leu Ile Asn Ser Asp Ile	
127 132 137 142	
gtg tgc gaa cag gac atc tac gag tgg act aag atc aat ggg atg ata	1142
Val Cys Glu Gln Asp Ile Tyr Glu Trp Thr Lys Ile Asn Gly Met Ile	
143 148 153 158	
tag gccc gagtccccgg gcatcttttg ggaggtgttc actgaagacg ccgtctccat	1199
* 159	
ggcatcttcg tcttcactct taggcacttt gggggtttga ggggtggggta agggatttct	1259
taggggatgg tagaccttta ttgggtatca agacatagca tccaagtggc ataattcagg	1319
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gagacgcatt tcggttgaga atggaaacca caacttttaa ccaaacaatt atttaaagca	1739
atgtgatga atcactgttt ttagacacct tcatttttag gggaggagtt ccacagattg	1799
tttctatata aatataaatc ttaaaaagtt gttcaactat tttattatcc tagattatat	1859
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actgaaaaaa aaaaaaaaaa	1939

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 ggggccccag gag atg ttg acc cag cag ggc atg gcg ctg cag aac tac 169
 Met Leu Thr Gln Gln Gly Met Ala Leu Gln Asn Tyr
 1 5 10
 gac aac aag ctg gtc aaa tgc ata gag gag cta tgc cag aag cag gag 217
 Asp Asn Lys Leu Val Lys Cys Ile Glu Glu Leu Cys Gln Lys Gln Glu
 13 18 23 28
 gag ctg tgc tgg cag atc cag cag gag gag gac aag aaa cag cgg ctg 265
 Glu Leu Cys Trp Gln Ile Gln Gln Glu Glu Asp Lys Lys Gln Arg Leu
 29 34 39 44
 cag aat gag gtg agg cag ctg aca gag aag ctg gcc tgc gtc aac gag 313
 Gln Asn Glu Val Arg Gln Leu Thr Glu Lys Leu Ala Cys Val Asn Glu
 45 50 55 60
 aag ctg gcc cgc gtc aac gag aac ctg gca cgc aag att gcc tct tgc 361
 Lys Leu Ala Arg Val Asn Glu Asn Leu Ala Arg Lys Ile Ala Ser Cys
 61 66 71 76
 agt aag ttc tac cag acc atc gcg gag acg gag gcc gcc tac ctc aag 409
 Ser Lys Phe Tyr Gln Thr Ile Ala Glu Thr Glu Ala Ala Tyr Leu Lys
 77 82 87 92
 atc ctg gag agc tcc cag act ttg ctc agc gtt ctc aag agg gaa gct 457
 Ile Leu Glu Ser Ser Gln Thr Leu Leu Ser Val Leu Lys Arg Glu Ala
 93 98 103 108
 ggg aac ctg acc aag gct aca gcc cca gac cag aaa agt agc ggc ggc 505
 Gly Asn Leu Thr Lys Ala Thr Ala Pro Asp Gln Lys Ser Ser Gly Gly
 109 114 119 124
 agg gac agc tga cca gaccacaggc agggcctgcc tccgtgtgcc cctcagctca 560
 Arg Asp Ser *
 125
 gccccagcaa gtgtgtgctc agagcatctt tgtttcttcac ggcagcagct accttcctc 620

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actgtctcag gtgccgagag gggcaggtgc cagcctccac tggcatcagt gacaagccca 680
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tccaggtcag ctctgcaagg ggcttgtctc tgtggcacc acactcctgc cctgccaggg 800
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aggcccaggg caagggacag gaggacaggg gttctccttc accacagaac ccaaacctca 920
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aaaaa 985

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<210> 79
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<213> Homo sapiens

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ctggcctaaa cccgacgcta ggctggaggg agcgactgcg ggccgggctg gcggggactg 180
gggcctcggt gtgggttcgtg ggggggctgg ggctgcttta cggcctgagg atccctttga 240
ggctgtgtga gaatttggca gggggcttat cttgagtaat aaaatagtac aggaagttag 300
agcggcacia acaacagtgg gtttgctagt tctttcgacg tctgtagaac acttgctacg 360
tattctgtgc tgacaatacg aacacatata tttgaatggt ggtacttcca taagcatggc 420
acatctttta ttgagcaagt atctgtaagc catttgcaac cactg atg gga gga 474
Met Gly Gly
1

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aca gag agc agc att tca gaa cca ggt tct cct tcg agg aac aga gaa 522
Thr Glu Ser Ser Ile Ser Glu Pro Gly Ser Pro Ser Arg Asn Arg Glu
4 9 14 19

aat gaa acc agc aga cag aat ttg tca gaa tgt aag gta tgg aga aac 570
Asn Glu Thr Ser Arg Gln Asn Leu Ser Glu Cys Lys Val Trp Arg Asn
20 25 30 35

cct cta aat ctt ttc aga gga gca gaa tat agg aga tac act tgg gtg 618
Pro Leu Asn Leu Phe Arg Gly Ala Glu Tyr Arg Arg Tyr Thr Trp Val
36 41 46 51

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act ggt aaa gag cca ctt aca tac tat gac atg aac ctg tca gct cag	666
Thr Gly Lys Glu Pro Leu Thr Tyr Tyr Asp Met Asn Leu Ser Ala Gln	
52 57 62 67	
gac cat cag acc ttt ttc acc tgt gac aca gat ttt tta cgt cct tca	714
Asp His Gln Thr Phe Phe Thr Cys Asp Thr Asp Phe Leu Arg Pro Ser	
68 73 78 83	
gac aca gtt atg cag aag gct tgg agg gaa aga aat cct cca gct cga	762
Asp Thr Val Met Gln Lys Ala Trp Arg Glu Arg Asn Pro Pro Ala Arg	
84 89 94 99	
atc aaa gca gcc tat caa gct tta gaa tta aac aat gac tgt gcc act	810
Ile Lys Ala Ala Tyr Gln Ala Leu Glu Leu Asn Asn Asp Cys Ala Thr	
100 105 110 115	
gca tat gtt cta ctg gct gag gaa gaa gca aca act att gta gat gct	858
Ala Tyr Val Leu Leu Ala Glu Glu Glu Ala Thr Thr Ile Val Asp Ala	
116 121 126 131	
gaa agg tta ttt aaa cag gca ctc aag gca gga gaa aca att tat agg	906
Glu Arg Leu Phe Lys Gln Ala Leu Lys Ala Gly Glu Thr Ile Tyr Arg	
132 137 142 147	
cag tca cag cag tgc cag cac caa agt cct cag cat gaa gct caa ctg	954
Gln Ser Gln Gln Cys Gln His Gln Ser Pro Gln His Glu Ala Gln Leu	
148 153 158 163	
agg aga gat acc aat gta ctg gta tat att aat tga agat tggcaatgtg	1004
Arg Arg Asp Thr Asn Val Leu Val Tyr Ile Asn *	
164 169 174	
tgcaagaaaa ttaggaagaa taagagaagc agtaaaaata atgagagatt tgatgaaaga	1064
atttctctct cttaccatgt tgaacatcca tgaaaatctc ttagaatcac ttttatgaat	1124
tacaggccta tccagatggt caggcagtc tagcaaaaata tgatgatata agccttccaa	1184
agtcagcagc aatctgttac acagcagcac tgttgaagac aaggactgtt tcagaaaaat	1244
tctctccaga aacagcctcc agaagaggat taagcacagc agaaattaat gccgtggaag	1304
caattcatag agctgtggaa tttaatcctc atgttccaaa atatttatta gagatgaaaa	1364
gtttaatttt acctccagaa cacattctga aacgggggtga tagtgaagca attgcctatg	1424
ctttctttca tcttcagcac tggaaacgaa tagaaggtgc tcttaatctg ttacagtgtg	1484
catgggaagg cactttttaga atgattccat acccgtaga gaaaggacat ctattttacc	1544
cttatcccag ctgcacagag acggctgata gagagctatt acctacctt catcatgttt	1604
ctgcttacc acaaaaggag cttcctttgt tcatccattt cacagcagga ttttgctctt	1664
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aagctg	1730

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 <222> (324)..(2318)

<400> 80

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ttgacagagc agcagaattht caactccagt agacttgaat gtgcctcttg gcaaagaagc      180
agagctaacg aggaaaggga tttaaagagt ttttcttggg tgtttgtcaa acttttattc      240
cctgtctgtg tgcagagggg attcaacttc aatttttctg cagtggctct gaggccagcc      300
ccttacttaa agatctggaa agc      atg aag act ggg ctt ttt ttc cta tgt      350
                                Met Lys Thr Gly Leu Phe Phe Leu Cys
                                1                      5

ctc ttg gga act gca gct gca atc ccg aca aat gca aga tta tta tct      398
Leu Leu Gly Thr Ala Ala Ala Ile Pro Thr Asn Ala Arg Leu Leu Ser
 10                      15                      20                      25

gat cat tcc aaa cca act gct gaa acg gta gca cct gac aac act gca      446
Asp His Ser Lys Pro Thr Ala Glu Thr Val Ala Pro Asp Asn Thr Ala
 26                      31                      36                      41

atc ccc agt tta agg gct gaa gct gaa gaa aat gaa aaa gaa aca gca      494
Ile Pro Ser Leu Arg Ala Glu Ala Glu Glu Asn Glu Lys Glu Thr Ala
 42                      47                      52                      57

gta tcc aca gaa gac gat tcc cac cat aag gct gaa aaa tca tca gta      542
Val Ser Thr Glu Asp Asp Ser His His Lys Ala Glu Lys Ser Ser Val
 58                      63                      68                      73

cta aag tca aaa gag gaa agc cat gaa cag tca gca gaa cag ggc aag      590
Leu Lys Ser Lys Glu Glu Ser His Glu Gln Ser Ala Glu Gln Gly Lys
 74                      79                      84                      89

agt tct agc caa gag ctg gga ttg aag gat caa gag gac agt gat ggt      638
Ser Ser Ser Gln Glu Leu Gly Leu Lys Asp Gln Glu Asp Ser Asp Gly
 90                      95                      100                      105

cac tta agt gtg aat ttg gag tat gca cca act gaa ggt aca ttg gac      686
His Leu Ser Val Asn Leu Glu Tyr Ala Pro Thr Glu Gly Thr Leu Asp
106                      111                      116                      121

ata aaa gaa gat atg agt gag cct cag gag aaa aaa ctc tca gag aac      734

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Ile	Lys	Glu	Asp	Met	Ser	Glu	Pro	Gln	Glu	Lys	Lys	Leu	Ser	Glu	Asn	
122					127					132					137	
act	gat	ttt	ttg	gct	cct	ggt	gtt	agt	tcc	ttc	aca	gat	tct	aac	caa	782
Thr	Asp	Phe	Leu	Ala	Pro	Gly	Val	Ser	Ser	Phe	Thr	Asp	Ser	Asn	Gln	
138					143					148					153	
caa	gaa	agt	atc	aca	aag	aga	gag	gaa	aac	caa	gaa	caa	cct	aga	aat	830
Gln	Glu	Ser	Ile	Thr	Lys	Arg	Glu	Glu	Asn	Gln	Glu	Gln	Pro	Arg	Asn	
154					159					164					169	
tat	tca	cat	cat	cag	ttg	aac	agg	agc	agt	aaa	cat	agc	caa	ggc	cta	878
Tyr	Ser	His	His	Gln	Leu	Asn	Arg	Ser	Ser	Lys	His	Ser	Gln	Gly	Leu	
170					175					180					185	
agg	gat	caa	gga	aac	caa	gag	cag	gat	cca	aat	att	tcc	aat	gga	gaa	926
Arg	Asp	Gln	Gly	Asn	Gln	Glu	Gln	Asp	Pro	Asn	Ile	Ser	Asn	Gly	Glu	
186					191					196					201	
gag	gaa	gaa	gaa	aaa	gag	cca	ggt	gaa	gtt	ggt	acc	cac	aat	gat	aac	974
Glu	Glu	Glu	Glu	Lys	Glu	Pro	Gly	Glu	Val	Gly	Thr	His	Asn	Asp	Asn	
202					207					212					217	
caa	gaa	aga	aag	aca	gaa	ttg	ccc	agg	gag	cat	gct	aac	agc	aag	cag	1022
Gln	Glu	Arg	Lys	Thr	Glu	Leu	Pro	Arg	Glu	His	Ala	Asn	Ser	Lys	Gln	
218					223					228					233	
gag	gaa	gac	aat	acc	caa	tct	gat	gat	att	ttg	gaa	gag	tct	gat	caa	1070
Glu	Glu	Asp	Asn	Thr	Gln	Ser	Asp	Asp	Ile	Leu	Glu	Glu	Ser	Asp	Gln	
234					239					244					249	
cca	act	caa	gta	agc	aag	atg	cag	gag	gat	gaa	ttt	gat	cag	ggt	aac	1118
Pro	Thr	Gln	Val	Ser	Lys	Met	Gln	Glu	Asp	Glu	Phe	Asp	Gln	Gly	Asn	
250					255					260					265	
caa	gaa	caa	gaa	gat	aac	tcc	aat	gca	gaa	atg	gaa	gag	gaa	aat	gca	1166
Gln	Glu	Gln	Glu	Asp	Asn	Ser	Asn	Ala	Glu	Met	Glu	Glu	Glu	Asn	Ala	
266					271					276					281	
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Ser	Asn	Val	Asn	Lys	His	Ile	Gln	Glu	Thr	Glu	Trp	Gln	Ser	Gln	Glu	
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Lys	Thr	Val	Ser	Glu	Ala	Leu	Leu	Met	Glu	Pro	Thr	Asp	Asp	Gly	Asn	
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Thr	Thr	Pro	Arg	Asn	His	Gly	Val	Asp	Asp	Asp	Gly	Asp	Asp	Asp	Gly	
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gat	gat	ggc	ggc	act	gat	ggc	ccc	agg	cac	agt	gca	agt	gat	gac	tac	1406
Asp	Asp	Gly	Gly	Thr	Asp	Gly	Pro	Arg	His	Ser	Ala	Ser	Asp	Asp	Tyr	

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Ala Tyr His Leu Lys Ile Glu Glu Gln Arg Glu Lys Val His Glu Asn				
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Glu Asn Ile Gly Thr Thr Glu Pro Gly Glu His Gln Glu Ala Lys Lys				
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Ala Glu Asn Ser Ser Asn Glu Glu Glu Thr Ser Ser Glu Gly Asn Met				
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Arg Val His Ala Val Asp Ser Cys Met Ser Phe Gln Cys Lys Arg Gly				
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cac atc tgt aag gca gac caa cag gga aaa cct cac tgt gtc tgc cag	1694			
His Ile Cys Lys Ala Asp Gln Gln Gly Lys Pro His Cys Val Cys Gln				
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gat cca gtg act tgt cct cca aca aaa ccc ctt gat caa gtt tgt ggc	1742			
Asp Pro Val Thr Cys Pro Pro Thr Lys Pro Leu Asp Gln Val Cys Gly				
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Cys Arg Leu Glu Gly Thr Lys Lys Gly His Gln Leu Gln Leu Asp Tyr				
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Phe Gly Ala Cys Lys Ser Ile Pro Thr Cys Thr Asp Phe Glu Val Ile				
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Gln Phe Pro Leu Arg Met Arg Asp Trp Leu Lys Asn Ile Leu Met Gln				
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Ala Ser Leu Val Pro Met Glu His Cys Ile Thr Arg Phe Phe Glu Glu	
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Cys Asp Pro Asn Lys Asp Lys His Ile Thr Leu Lys Glu Trp Gly His	
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Arg Phe Leu Leu Gln His Leu Gly Arg Val Ala Ser Arg Ala Pro Ala	
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Leu Gly Pro Ala Val Arg Ala Leu Gly Ala Thr Phe Gly Pro Leu Leu	
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Leu Arg Ala Pro Pro Pro Pro Ser Ser Pro Pro Pro Gly Gly Ala Pro	
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Asp Gly Ser Glu Pro Ser Pro Asp Phe Pro Ala Leu Leu Val Glu Lys	
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Leu Leu Gln Glu His Leu Glu Glu Gln Glu Val Ala Pro Pro Ala Leu	
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 Val Met Leu Glu Asn Tyr Asn Asn Leu Ile Thr Val Gly Tyr Pro Phe
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Lys Leu Ile Lys His Tyr Lys Ile His Ser Arg Glu Gln Ser Tyr Lys	
252 257 262 267	
tgt aat gaa tgt ggt aaa gct ttc att aaa atg tca aat ctc att aga	1107
Cys Asn Glu Cys Gly Lys Ala Phe Ile Lys Met Ser Asn Leu Ile Arg	
268 273 278 283	
cat caa aga att cat act gga gag aag ccc tat gca tgt aag gaa tgt	1155
His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Ala Cys Lys Glu Cys	
284 289 294 299	

gag aag tcc ttc agc cag aaa tca aat ctt att gat cat gaa aaa att	1203
Glu Lys Ser Phe Ser Gln Lys Ser Asn Leu Ile Asp His Glu Lys Ile	
300 305 310 315	
cat act gga gag aaa cct tat gaa tgt aat gag tgt gga aaa gca ttc	1251
His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe	
316 321 326 331	
agc cag aag caa agc ctc att gca cat cag aaa gtt cat act ggg gag	1299
Ser Gln Lys Gln Ser Leu Ile Ala His Gln Lys Val His Thr Gly Glu	
332 337 342 347	
aaa cct tat gca tgt aat gaa tgt ggt aaa gcc ttc cct cga att gca	1347
Lys Pro Tyr Ala Cys Asn Glu Cys Gly Lys Ala Phe Pro Arg Ile Ala	
348 353 358 363	
tcc ctt gct ctt cat atg aga agt cat aca gga gaa aaa cct tat aaa	1395
Ser Leu Ala Leu His Met Arg Ser His Thr Gly Glu Lys Pro Tyr Lys	
364 369 374 379	
tgt gat aaa tgt ggt aaa gcc ttc tct cag ttt tcc atg ctt att ata	1443
Cys Asp Lys Cys Gly Lys Ala Phe Ser Gln Phe Ser Met Leu Ile Ile	
380 385 390 395	
cat gtt aga att cat aca ggt gaa aaa ccc tat gaa tgt aat gag tgt	1491
His Val Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys	
396 401 406 411	
gga aaa gcc ttc tct caa agc tca gcc ctt act gta cat atg aga agt	1539
Gly Lys Ala Phe Ser Gln Ser Ser Ala Leu Thr Val His Met Arg Ser	
412 417 422 427	
cac act ggt gag aaa ccc tat gaa tgt aag gaa tgc aga aaa gcc ttc	1587
His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Glu Cys Arg Lys Ala Phe	
428 433 438 443	
agc cac aag aaa aac ttc att aca cac cag aaa att cat act aga gag	1635
Ser His Lys Lys Asn Phe Ile Thr His Gln Lys Ile His Thr Arg Glu	
444 449 454 459	
aaa cct tat gag tgt aat gaa tgt ggg aaa gct ttt ata cag atg tca	1683
Lys Pro Tyr Glu Cys Asn Glu Cys Gly Lys Ala Phe Ile Gln Met Ser	
460 465 470 475	
aat ctt gtt aga cac cag aga att cat act ggg gaa aaa ccc tat ata	1731
Asn Leu Val Arg His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Ile	
476 481 486 491	
tgt aag gaa tgt ggg aaa gcc ttt agc cag aat tca aat ctc att gct	1779
Cys Lys Glu Cys Gly Lys Ala Phe Ser Gln Asn Ser Asn Leu Ile Ala	
492 497 502 507	
cat gaa aaa att cat tct gga gag aaa ccc tat gaa tgc aat gaa tgt	1827
His Glu Lys Ile His Ser Gly Glu Lys Pro Tyr Glu Cys Asn Glu Cys	
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<400> 83

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aggtagccct gggagtcggg atctagaagg tagaggagaa gcggggctgt ctgacccccg      180
gaggtgacaa ggggagaggg gctgtgtgaa taccctccat gggcagtaat gggatgacta      240
tccccagggg gcattgcgaa ggagagaggc ggctgagggg ctgcactttc tggggccccc      300
cgggagagtc agagggcagt taagagggat cacaggcccg gcttgggtact gtcactcccc      360

ttccactcc ctgctctcag cattctgtca cctccctacc ccgtcgcggt gccagcc      418
atg gcc aga cct ccc gtg ccc ggt tcg gtg gtt gtc cca aac tgg cac      466
Met Ala Arg Pro Pro Val Pro Gly Ser Val Val Val Pro Asn Trp His
  1             5             10             15

gag agt gcc gag ggc aag gag tac ctg gct tgc att ctg cgc aag aac      514
Glu Ser Ala Glu Gly Lys Glu Tyr Leu Ala Cys Ile Leu Arg Lys Asn
  17             22             27             32

cgc cgg cgg gtg ttt ggg ctg ctt gag cgg cca gtg ctg ctg ccg cct      562
Arg Arg Arg Val Phe Gly Leu Leu Glu Arg Pro Val Leu Leu Pro Pro
  33             38             43             48

gtg tcc att gac act gcc agc tac aag atc ttt gtg tcc ggg aag agt      610
Val Ser Ile Asp Thr Ala Ser Tyr Lys Ile Phe Val Ser Gly Lys Ser
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Gly Val Gly Lys Thr Ala Leu Val Ala Lys Leu Ala Gly Leu Glu Val
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cct gtg gtg cac cac gag acc acc ggc atc cag acc acc gtg gta ttt      706
Pro Val Val His His Glu Thr Thr Gly Ile Gln Thr Thr Val Val Phe
  81             86             91             96

tgg cca gcc aag ctg cag gcc agc agc cgt gtc gtc atg ttt cgt ttt      754
Trp Pro Ala Lys Leu Gln Ala Ser Ser Arg Val Val Met Phe Arg Phe
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gag ttc tgg gac tgt gga gag tct gca ctc aaa aag ttc gat cat atg      802
Glu Phe Trp Asp Cys Gly Glu Ser Ala Leu Lys Lys Phe Asp His Met
  113            118            123            128

ctg ctg gct tgc atg gag aac aca gat gcc ttc ctc ttc ctc ttc tcc      850
Leu Leu Ala Cys Met Glu Asn Thr Asp Ala Phe Leu Phe Leu Phe Ser
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Phe Thr Asp Arg Ala Ser Phe Glu Asp Leu Pro Gly Gln Leu Ala Arg	
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ata gca ggt gag gcc cct ggt gtc gtc agg atg gtc atc ggc tcc aaa	946
Ile Ala Gly Glu Ala Pro Gly Val Val Arg Met Val Ile Gly Ser Lys	
161 166 171 176	
ttt gac cag tac atg cac acg gac gtg ccc gag cgg gac ctc aca gcc	994
Phe Asp Gln Tyr Met His Thr Asp Val Pro Glu Arg Asp Leu Thr Ala	
177 182 187 192	
ttc cgg cag gcc tgg gag ctg ccc ctg cta cgg gtg aag agt gtg ccg	1042
Phe Arg Gln Ala Trp Glu Leu Pro Leu Leu Arg Val Lys Ser Val Pro	
193 198 203 208	
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Gly Arg Arg Leu Ala Asp Gly Arg Thr Leu Asp Gly Arg Ala Gly Leu	
209 214 219 224	
gcc gac gtt gcc cac ata ctc aat ggc ctt gct gag cag ctg tgg cac	1138
Ala Asp Val Ala His Ile Leu Asn Gly Leu Ala Glu Gln Leu Trp His	
225 230 235 240	
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Gln Asp Gln Val Ala Ala Gly Leu Leu Pro Asn Pro Pro Glu Ser Ala	
241 246 251 256	
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Pro Glu *	
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catagggctg gaggctgggg caggaacatg gatcctatct ggaggactgg ccagcatggc	1302
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<211> 2188

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 gaattggcat ctgctggctg tgtggccctt gcttgcccta gtgagttacc atttctctgt 180
 ccctacggng gagcctttgg gggtattgtg agttcatggg aggagcgtgt aagcaccggc 240
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 agaccctaga cctgcatagt gatcccccca ccaggaaggc cccacaag atg ctc acc 357
 Met Leu Thr
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 Cys Pro Pro Tyr Pro Cys Pro Gln Leu Glu Glu His Arg Asn Ser Gln
 4 9 14 19
 aag cag atg aag ctc cta cag aaa aag cag agc cag ctg gtg caa gag 453
 Lys Gln Met Lys Leu Leu Gln Lys Lys Gln Ser Gln Leu Val Gln Glu
 20 25 30 35
 aag gac cac ctg cgc ggt gag cac agc aag gcc gtc ctg gcc cgc agc 501
 Lys Asp His Leu Arg Gly Glu His Ser Lys Ala Val Leu Ala Arg Ser
 36 41 46 51
 aag ctt gag agc cta tgc cgt gag ctg cag cgg cac aac cgc tcc ctc 549
 Lys Leu Glu Ser Leu Cys Arg Glu Leu Gln Arg His Asn Arg Ser Leu
 52 57 62 67
 aag gaa gaa ggt gtg cag cgg gcc cgg gag gag gag gag aag cgc aag 597
 Lys Glu Glu Gly Val Gln Arg Ala Arg Glu Glu Glu Glu Lys Arg Lys
 68 73 78 83
 gag gtg acc tcg cac ttc cag gtg aca ctg aat gac att cag ctg cag 645
 Glu Val Thr Ser His Phe Gln Val Thr Leu Asn Asp Ile Gln Leu Gln
 84 89 94 99
 atg gaa cag cac aat gag cgc aac tcc aag ctg cgc caa gag aac atg 693
 Met Glu Gln His Asn Glu Arg Asn Ser Lys Leu Arg Gln Glu Asn Met
 100 105 110 115
 gag ctg gct gag agg ctc aag aag ctg att gag cag tat gag ctg cgc 741
 Glu Leu Ala Glu Arg Leu Lys Lys Leu Ile Glu Gln Tyr Glu Leu Arg
 116 121 126 131
 gag gag cat atc gac aaa gtc ttc aaa cac aag gac cta caa cag cag 789

Glu Glu His Ile Asp	Lys Val Phe Lys His Lys Asp Leu Gln Gln Gln	
132	137	142 147
ctg gtg gat gcc aag	ctc cag cag gcc cag gag atg cta aag gag gca	837
Leu Val Asp Ala Lys	Leu Gln Gln Ala Gln Glu Met Leu Lys Glu Ala	
148	153 158	163
gaa gag cgg cac cag	cgg gag aag gat ttt ctc ctg aaa gag gca gta	885
Glu Glu Arg His Gln	Arg Glu Lys Asp Phe Leu Leu Lys Glu Ala Val	
164	169 174	179
gag tcc cag agg atg	tgt gag ctg atg aag cag caa gag acc cac ctg	933
Glu Ser Gln Arg Met	Cys Glu Leu Met Lys Gln Gln Glu Thr His Leu	
180	185 190	195
aag caa cag ctt gcc	cta tac aca gag aag ttt gag gag ttc cag aac	981
Lys Gln Gln Leu Ala	Leu Tyr Thr Glu Lys Phe Glu Glu Phe Gln Asn	
196	201 206	211
aca ctt tcc aaa agc	agc gag gta ttc acc aca ttc aag cag gag atg	1029
Thr Leu Ser Lys Ser	Ser Glu Val Phe Thr Thr Phe Lys Gln Glu Met	
212	217 222	227
gaa aag atg act aag	aag atc aag aag ctg gag aaa gaa acc acc atg	1077
Glu Lys Met Thr Lys	Lys Ile Lys Lys Leu Glu Lys Glu Thr Thr Met	
228	233 238	243
tac cgg tcc cgg tgg	gag agc agc aac aag gcc ctg ctt gag atg gct	1125
Tyr Arg Ser Arg Trp	Glu Ser Ser Asn Lys Ala Leu Leu Glu Met Ala	
244	249 254	259
gag gag aaa aca gtc	cgg gat aaa gaa ctg gag ggc ctg cag gta aaa	1173
Glu Glu Lys Thr Val	Arg Asp Lys Glu Leu Glu Gly Leu Gln Val Lys	
260	265 270	275
atc caa cgg ctg gag	aag ctg tgc cgg gca ctg cag aca gag cgc aat	1221
Ile Gln Arg Leu Glu	Lys Leu Cys Arg Ala Leu Gln Thr Glu Arg Asn	
276	281 286	291
gac ctg aac aag agg	gta cag gac ctg agt gct ggt ggc cag ggc tcc	1269
Asp Leu Asn Lys Arg	Val Gln Asp Leu Ser Ala Gly Gly Gln Gly Ser	
292	297 302	307
ctc act gac agt ggc	cct gag agg agg cca gag ggg cct ggg gct caa	1317
Leu Thr Asp Ser Gly	Pro Glu Arg Arg Pro Glu Gly Pro Gly Ala Gln	
308	313 318	323
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Ala Pro Ser Ser Pro	Arg Val Thr Glu Ala Pro Cys Tyr Pro Gly Ala	
324	329 334	339
ccg agc aca gaa gca	tca ggc cag act ggg cct caa gag ccc acc tcc	1413
Pro Ser Thr Glu Ala	Ser Gly Gln Thr Gly Pro Gln Glu Pro Thr Ser	
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gcc agg gcc tag aga	gcctgggtgtt gggtcatgct gggaaggag cggcagccca	1468
Ala Arg Ala *		

356

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atagggcatt ttgcaaggcc ttgcaaatgc atttatacct gtaagtgtac agtgggcttg 1648
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atg ggg gac aag aaa gat gac aag gac tca ccc aag aag aac aag ggc 165
Met Gly Asp Lys Lys Asp Asp Lys Asp Ser Pro Lys Lys Asn Lys Gly
1 5 10 15
aag gag cgc cgg gac ctg gat gac ctc aag aag gag gtg gct atg aca 213
Lys Glu Arg Arg Asp Leu Asp Asp Leu Lys Lys Glu Val Ala Met Thr
17 22 27 32
gag cac aag atg tca gtg gaa gag gtc tgc cgg aaa tac aac aca gac 261
Glu His Lys Met Ser Val Glu Glu Val Cys Arg Lys Tyr Asn Thr Asp
33 38 43 48
tgt gtg cag ggt ttg acc cac agc aaa gcc cag gag atc ctg gcc cgg 309
Cys Val Gln Gly Leu Thr His Ser Lys Ala Gln Glu Ile Leu Ala Arg
49 54 59 64

gat ggg cct aac gca ctc acg cca ccg cct acc acc cca gag tgg gtc	357
Asp Gly Pro Asn Ala Leu Thr Pro Pro Pro Thr Thr Pro Glu Trp Val	
65 70 75 80	
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Lys Phe Cys Arg Gln Leu Phe Gly Gly Phe Ser Ile Leu Leu Trp Ile	
81 86 91 96	
ggg gct atc ctc tgc ttc ctg gcc tac ggt atc cag gcg ggc acc gag	453
Gly Ala Ile Leu Cys Phe Leu Ala Tyr Gly Ile Gln Ala Gly Thr Glu	
97 102 107 112	
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Asp Asp Pro Ser Gly Asp Asn Leu Tyr Leu Gly Ile Val Leu Ala Ala	
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Val Val Ile Ile Thr Gly Cys Phe Ser Tyr Tyr Gln Glu Ala Lys Ser	
129 134 139 144	
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Ser Lys Ile Met Glu Ser Phe Lys Asn Met Val Pro Gln Gln Ala Leu	
145 150 155 160	
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Val Ile Arg Glu Gly Glu Lys Met Gln Val Asn Ala Glu Glu Val Val	
161 166 171 176	
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Val Gly Asp Leu Val Glu Ile Lys Gly Gly Asp Arg Val Pro Ala Asp	
177 182 187 192	
ctg cgg atc atc tca gcc cac ggc tgc aag gtg gac aac tcc tcc ctg	741
Leu Arg Ile Ile Ser Ala His Gly Cys Lys Val Asp Asn Ser Ser Leu	
193 198 203 208	
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Met Gly Arg Ile Ala Thr Leu Ala Ser Gly Leu Glu Val Gly Lys Thr	
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273 278 283 288	

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Tyr Thr Trp Leu Glu Ala Val Ile Phe Leu Ile Gly Ile Ile Val Ala	
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Asn Val Pro Glu Gly Leu Leu Ala Thr Val Thr Val Cys Leu Thr Leu	
321 326 331 336	
acc gcc aag cgc atg gcc cgg aag aac tgc ctg gtg aag aac ctg gag	1173
Thr Ala Lys Arg Met Ala Arg Lys Asn Cys Leu Val Lys Asn Leu Glu	
337 342 347 352	
gct gta gaa acc ctg ggc tcc acg tcc acc atc tgc tca gat aag aca	1221
Ala Val Glu Thr Leu Gly Ser Thr Ser Thr Ile Cys Ser Asp Lys Thr	
353 358 363 368	
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Gly Thr Leu Thr Gln Asn Arg Met Thr Val Ala His Met Trp Phe Asp	
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Asn Gln Ile His Glu Ala Asp Thr Thr Glu Asp Gln Ser Gly Thr Ser	
385 390 395 400	
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Phe Asp Lys Ser Ser His Thr Trp Val Ala Leu Ser His Ile Ala Gly	
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Leu Cys Asn Arg Ala Val Phe Lys Gly Gly Gln Asp Asn Ile Pro Val	
417 422 427 432	
ctc aag agg gat gtg gct ggg gat gcg tct gag tct gcc ctg ctc aag	1461
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433 438 443 448	
tgc atc gag ctg tcc tct ggc tcc gtg aag ctg atg cgt gaa cgc aac	1509
Cys Ile Glu Leu Ser Ser Gly Ser Val Lys Leu Met Arg Glu Arg Asn	
449 454 459 464	
aag aaa gtg gct gag att ccc ttc aat tcc acc aac aaa tac cag ctc	1557
Lys Lys Val Ala Glu Ile Pro Phe Asn Ser Thr Asn Lys Tyr Gln Leu	
465 470 475 480	
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Ser Ile His Glu Thr Glu Asp Pro Asn Asp Asn Arg Tyr Leu Leu Val	
481 486 491 496	
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Met Lys Gly Ala Pro Glu Arg Ile Leu Asp Arg Cys Ser Thr Ile Leu	
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Leu Gln Gly Lys Glu Gln Pro Leu Asp Glu Glu Met Lys Glu Ala Phe	
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Gln Asn Ala Tyr Leu Glu Leu Gly Gly Leu Gly Glu Arg Val Leu Gly	
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593 598 603 608	
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Asp His Pro Ile Thr Ala Lys Ala Ile Ala Lys Gly Val Gly Ile Ile	
609 614 619 624	
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Phe Glu Gly Asn Glu Thr Val Glu Asp Ile Ala Ala Arg Leu Asn Ile	
625 630 635 640	
ccc gtc agc cag gtt aac ccc cgg gat gcc aag gcc tgc gtg atc cac	2085
Pro Val Ser Gln Val Asn Pro Arg Asp Ala Lys Ala Cys Val Ile His	
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657 662 667 672	
cag aat cac acc gag atc gtc ttc gcc cgc aca tcc ccc cag cag aag	2181
Gln Asn His Thr Glu Ile Val Phe Ala Arg Thr Ser Pro Gln Gln Lys	
673 678 683 688	
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Leu Ile Ile Val Glu Gly Cys Gln Arg Gln Gly Ala Ile Val Ala Val	
689 694 699 704	
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Thr Gly Asp Gly Val Asn Asp Ser Pro Ala Leu Lys Lys Ala Asp Ile	
705 710 715 720	
ggg gtg gcc atg ggc atc gct ggc tct gac gtc tcc aag cag gca gct	2325
Gly Val Ala Met Gly Ile Ala Gly Ser Asp Val Ser Lys Gln Ala Ala	
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Glu Glu Gly Arg Leu	Ile Phe Asp Asn Leu	Lys Lys Ser Ile Ala	Tyr	
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acc ctg acc agc aat	atc ccg gag atc acg	ccc ttc ctg ctg ttc	atc	2469
Thr Leu Thr Ser Asn	Ile Pro Glu Ile Thr	Pro Phe Leu Leu Phe	Ile	
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Met Ala Asn Ile Pro	Leu Pro Leu Gly Thr	Ile Thr Ile Leu Cys	Ile	
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Ala Glu Ser Asp Ile	Met Lys Arg Gln Pro	Arg Asn Pro Arg Thr	Asp	
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cggaattcaa aacggacctg	gagg atg ttg atc tcc	aag aac atg ccc tgg	171
	Met Leu Ile Ser Lys	Asn Met Pro Trp	

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5

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Arg Arg Leu Gln Gly Ile Ser Phe Gly Met Tyr Ser Ala Glu Glu Leu
10 15 20 25

aag aaa tta agt gtt aaa tcc att acg aac cct cga tac ctg gac agc 267
Lys Lys Leu Ser Val Lys Ser Ile Thr Asn Pro Arg Tyr Leu Asp Ser
26 31 36 41

ctg ggg aac cca tcg gca aac ggc ctg tac gat tta gct ttg ggc cct 315
Leu Gly Asn Pro Ser Ala Asn Gly Leu Tyr Asp Leu Ala Leu Gly Pro
42 47 52 57

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Ala Asp Ser Lys Glu Val Cys Ser Thr Cys Val Gln Asp Phe Ser Asn
58 63 68 73

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Cys Ser Gly His Leu Gly His Ile Glu Leu Pro Leu Thr Val Tyr Asn
74 79 84 89

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Pro Leu Leu Phe Asp Lys Leu Tyr Leu Leu Leu Arg Gly Ser Cys Leu
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Asn Cys His Met Leu Thr Cys Pro Arg Ala Val Ile His Leu Leu Leu
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Cys Gln Leu Arg Val Leu Glu Val Gly Ala Leu Gln Ala Val Tyr Glu
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186 191 196 201

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Tyr Leu Val Pro Lys Asp Gly Gln Pro Leu Ala Gly Leu Ile Gln Asp	
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His Met Val Ser Gly Ala Ser Met Thr Thr Arg Gly Cys Phe Phe Thr	
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Cys Gly Val Leu Asp Lys Ala His Tyr Gly Ser Ser Ala Tyr Gly Leu	
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Ile Ser Ser Asp Asn Ser Asp Thr Thr Asp Ser His Ala Thr Ser Thr
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Ser Ala Ser Arg Cys Ser Lys Leu Pro Ser Ser Thr Lys Ser Gly Trp
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Gln Val Pro Ala Gly Ala Glu Ala Ile Pro Glu Pro Val Val Arg Ile
90 95 100 105

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Leu Pro Pro Leu Glu Gly Pro Pro Ala Gln Ala Ser Pro Ser Ser Thr

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Ile Pro Glu Val Ser	Ile Gly Cys Pro Glu	Lys Met Glu Pro Ile Thr		
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Lys Ile Ser His Ile	Pro Ala Ser Arg Trp	Ala Leu Ser Cys Ser Leu		
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Thr Glu Pro Ser Gln Ala Gly Glu Asp Leu Glu Lys Val Thr Leu Arg	
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Gln Asp Leu Glu Arg Val Arg Asn Leu Cys Tyr Met Val Thr Arg Arg	
474 479 484 489	
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Glu Arg Thr Lys His Ala Ile Cys Lys Leu Gln Glu Gln Ile Phe His	
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682					687					692					697	

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698					703					708					713	

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Ala Ile Gln Asp Val Ala Lys Asp Thr Ala Phe Leu Gly Ile Thr Asp
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Tyr Ser Asn Trp Lys Lys Asp Glu Pro Asn Asp His Gly Ser Gly Glu
73 78 83 88

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Met Thr Lys
1
gcc cag gaa tca ctg acc ctg gag gat gtg gct gtg gac ttc acc tgg 345
Ala Gln Glu Ser Leu Thr Leu Glu Asp Val Ala Val Asp Phe Thr Trp
4 9 14 19
gag gag tgg cag ttc ctg agc cct gct cag aag gac ctg tac cgg gat 393
Glu Glu Trp Gln Phe Leu Ser Pro Ala Gln Lys Asp Leu Tyr Arg Asp
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Val Met Leu Glu Asn Tyr Ser Asn Leu Val Ser Val Gly Tyr Gln Ala
36 41 46 51
ggc aaa cct gat gcc ctc acc aag ttg gaa caa gga gaa cca cta tgg 489
Gly Lys Pro Asp Ala Leu Thr Lys Leu Glu Gln Gly Glu Pro Leu Trp
52 57 62 67
aca cta gaa gat gaa atc cac agt cca gcc cac cca gaa att gag aaa 537
Thr Leu Glu Asp Glu Ile His Ser Pro Ala His Pro Glu Ile Glu Lys
68 73 78 83
gct gat gat cat ctg cag cag ccc ttg caa aac caa aaa ata ctg aag 585
Ala Asp Asp His Leu Gln Gln Pro Leu Gln Asn Gln Lys Ile Leu Lys
84 89 94 99
agg acg gga caa cgc tat gaa cac gga aga act ttg aaa tca tat tta 633
Arg Thr Gly Gln Arg Tyr Glu His Gly Arg Thr Leu Lys Ser Tyr Leu
100 105 110 115
ggt tta acc aac cag agc aga aga tac aac aga aag gag cct gct gag 681
Gly Leu Thr Asn Gln Ser Arg Arg Tyr Asn Arg Lys Glu Pro Ala Glu
116 121 126 131
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Phe Asn Gly Asp Gly Ala Phe Leu His Asp Asn His Glu Gln Met Pro
132 137 142 147
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Thr Glu Ile Glu Phe Pro Glu Ser Arg Lys Pro Ile Ser Thr Lys Ser
148 153 158 163
caa ttc ctt aaa cat cag caa aca cac aac ata gag aaa gcc cat gaa 825
Gln Phe Leu Lys His Gln Gln Thr His Asn Ile Glu Lys Ala His Glu
164 169 174 179
tgc act gac tgt ggg aaa gct ttc ctc aag aag tct cag ctc act gag 873
Cys Thr Asp Cys Gly Lys Ala Phe Leu Lys Lys Ser Gln Leu Thr Glu
180 185 190 195

cat aag aga att cat aca gga aag aaa ccc cac gtg tgt agc ttg tgt	921
His Lys Arg Ile His Thr Gly Lys Lys Pro His Val Cys Ser Leu Cys	
196 201 206 211	
ggg aaa gcc ttc tac aag aag tac agg ctc act gaa cac gag aga gct	969
Gly Lys Ala Phe Tyr Lys Lys Tyr Arg Leu Thr Glu His Glu Arg Ala	
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His Arg Gly Glu Lys Pro His Gly Cys Ser Leu Cys Gly Lys Ala Phe	
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Tyr Lys Arg Tyr Arg Leu Thr Glu His Glu Arg Ala His Lys Gly Glu	
244 249 254 259	
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Lys Pro Tyr Gly Cys Ser Glu Cys Gly Lys Ala Phe Pro Arg Lys Ser	
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Glu Leu Thr Glu His Gln Arg Ile His Thr Gly Ile Lys Pro His Gln	
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Cys Ser Glu Cys Gly Arg Ala Phe Ser Arg Lys Ser Leu Leu Val Val	
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His Gln Arg Thr His Thr Gly Glu Lys Pro His Thr Cys Ser Glu Cys	
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His Thr Gly Glu Lys Pro Tyr Gly Cys Ile Asp Cys Gly Lys Ala Phe	
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Ser Gln Lys Ser Cys Leu Val Ala His Gln Arg Tyr His Thr Gly Lys	
356 361 366 371	
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Thr Pro Phe Val Cys Pro Glu Cys Gly Gln Pro Cys Ser Gln Lys Ser	
372 377 382 387	
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Gly Leu Ile Arg His Gln Lys Ile His Ser Gly Glu Lys Pro Tyr Lys	
388 393 398 403	
tgc agt gac tgt ggg aaa gcc ttc ctt aca aag aca atg ctc att gta	1545
Cys Ser Asp Cys Gly Lys Ala Phe Leu Thr Lys Thr Met Leu Ile Val	
404 409 414 419	
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His	His	Arg	Thr	His	Thr	Gly	Glu	Arg	Pro	Tyr	Gly	Cys	Asp	Glu	Cys	
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Glu	Lys	Ala	Tyr	Phe	Tyr	Met	Ser	Cys	Leu	Val	Lys	His	Lys	Arg	Ile	
436					441					446					451	
cac	tca	agg	gag	aaa	cgg	ggg	gat	tca	gtg	aag	gtg	gaa	aat	cct	tcc	1689
His	Ser	Arg	Glu	Lys	Arg	Gly	Asp	Ser	Val	Lys	Val	Glu	Asn	Pro	Ser	
452					457					462					467	
aca	gca	agt	cac	agc	tta	agt	cct	agt	gaa	cat	gtg	cag	ggg	aaa	agc	1737
Thr	Ala	Ser	His	Ser	Leu	Ser	Pro	Ser	Glu	His	Val	Gln	Gly	Lys	Ser	
468					473					478					483	
cct	gtt	aat	atg	gta	act	gtg	gca	atg	gtg	gca	ggg	cag	tgt	gag	ttt	1785
Pro	Val	Asn	Met	Val	Thr	Val	Ala	Met	Val	Ala	Gly	Gln	Cys	Glu	Phe	
484					489					494					499	
gcc	cac	atc	ctg	cat	tca	tga	ta	aacagtttgc	tgtttgatca	tatagcctcc						1838
Ala	His	Ile	Leu	His	Ser	*										
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	tggtgcaac	atcactgaac	agagcataga	gacctctcc	ttgccaccg	gcccttccca	240
	cctggttggt	gacaaatcac	aaggtggtag	aagttgccag	ggacagataa	c atg gca	297

Met Ala

1

gcc agc ggg aag acc agc aag tcc gaa ccg aac cat gtt atc ttc aag	345
Ala Ser Gly Lys Thr Ser Lys Ser Glu Pro Asn His Val Ile Phe Lys	
3 8 13 18	
aag atc tcc cgg gac aaa tcg gtg acc atc tac ctg ggg aac aga gac	393
Lys Ile Ser Arg Asp Lys Ser Val Thr Ile Tyr Leu Gly Asn Arg Asp	
19 24 29 34	
tac ata gac cat gtc agc caa gtc cag cct gtg gat ggt gtc gtg ttg	441
Tyr Ile Asp His Val Ser Gln Val Gln Pro Val Asp Gly Val Val Leu	
35 40 45 50	
gtt gat cct gat ctt gtg aag gga aag aaa gtg tat gtc act ctg acc	489
Val Asp Pro Asp Leu Val Lys Gly Lys Lys Val Tyr Val Thr Leu Thr	
51 56 61 66	
tgc gcc ttc cgc tat ggc caa gag gac att gac gtg atc ggc ttg acc	537
Cys Ala Phe Arg Tyr Gly Gln Glu Asp Ile Asp Val Ile Gly Leu Thr	
67 72 77 82	
ttc cgc agg gac ctg tac ttc tcc cgg gtc cag gtg tat cct cct gtg	585
Phe Arg Arg Asp Leu Tyr Phe Ser Arg Val Gln Val Tyr Pro Pro Val	
83 88 93 98	
ggg gcc gcg agc acc ccc aca aaa ctg caa gag agc ctg ctt aaa aag	633
Gly Ala Ala Ser Thr Pro Thr Lys Leu Gln Glu Ser Leu Leu Lys Lys	
99 104 109 114	
ctg ggg agc aac acg tac ccc ttt ctc ctg acg ttt cct gac tac ttg	681
Leu Gly Ser Asn Thr Tyr Pro Phe Leu Leu Thr Phe Pro Asp Tyr Leu	
115 120 125 130	
ccc tgt tca gtg atg ttg cag cca gct cca caa gat tca ggg aag tcc	729
Pro Cys Ser Val Met Leu Gln Pro Ala Pro Gln Asp Ser Gly Lys Ser	
131 136 141 146	
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Cys Gly Val Asp Phe Glu Val Lys Ala Phe Ala Thr Asp Ser Thr Asp	
147 152 157 162	
gcc gaa gag gac aaa atc ccc aag aag agc tcc gtg cga tta ctg atc	825
Ala Glu Glu Asp Lys Ile Pro Lys Lys Ser Ser Val Arg Leu Leu Ile	
163 168 173 178	
cgc aaa gta cag cat gcc cca ctt gag atg ggt ccc cag ccc cga gct	873
Arg Lys Val Gln His Ala Pro Leu Glu Met Gly Pro Gln Pro Arg Ala	
179 184 189 194	
gag gcg gcc tgg cag ttc ttc atg tct gac aag ccc ctg cac ctt gcg	921
Glu Ala Ala Trp Gln Phe Phe Met Ser Asp Lys Pro Leu His Leu Ala	
195 200 205 210	
gtc tct ctc aac aaa gag atc tat ttc cat ggg gag ccc atc cct gtg	969
Val Ser Leu Asn Lys Glu Ile Tyr Phe His Gly Glu Pro Ile Pro Val	

211	216	221	226	
acc gtg act gtc acc	aat aac aca gag aag	acc gtg aag aag att aaa		1017
Thr Val Thr Val Thr	Asn Asn Thr Glu Lys	Thr Val Lys Lys Ile Lys		
227	232	237	242	
gca ttc gtg gaa cag	gtg gcc aat gtg gtt	ctc tac tcg agt gat tat		1065
Ala Phe Val Glu Gln	Val Ala Asn Val Val	Leu Tyr Ser Ser Asp Tyr		
243	248	253	258	
tac gtc aag ccc gtg	gct atg gag gaa gcg	caa gaa aaa gtg cca cca		1113
Tyr Val Lys Pro Val	Ala Met Glu Glu Ala	Gln Glu Lys Val Pro Pro		
259	264	269	274	
aac agc act ttg acc	aag acg ctg acg ctg	ctg ccc ttg ctg gct aac		1161
Asn Ser Thr Leu Thr	Lys Thr Leu Thr Leu	Leu Pro Leu Leu Ala Asn		
275	280	285	290	
aat cga gaa agg aga	ggc att gcc ctg gat	ggg aaa atc aag cac gag		1209
Asn Arg Glu Arg Arg	Gly Ile Ala Leu Asp	Gly Lys Ile Lys His Glu		
291	296	301	306	
gac aca aac ctt gcc	tcc agc acc atc att	aag gag ggc ata gac cgg		1257
Asp Thr Asn Leu Ala	Ser Ser Thr Ile Ile	Lys Glu Gly Ile Asp Arg		
307	312	317	322	
acc gtc ctg gga atc	ctg gtg tct tac cag	atc aag gtg aag ctc aca		1305
Thr Val Leu Gly Ile	Leu Val Ser Tyr Gln	Ile Lys Val Lys Leu Thr		
323	328	333	338	
gtg tca ggc ttt ctg	gga gag ctc acc tcc	agt gaa gtc gcc act gag		1353
Val Ser Gly Phe Leu	Gly Glu Leu Thr Ser	Ser Glu Val Ala Thr Glu		
339	344	349	354	
gtc cca ttc cgc ctc	atg cac cct cag cct	gag gac cca gct aag gaa		1401
Val Pro Phe Arg Leu	Met His Pro Gln Pro	Glu Asp Pro Ala Lys Glu		
355	360	365	370	
agt tat cag gat gca	aat tta gtt ttt gag	gag ttt gct cgc cat aat		1449
Ser Tyr Gln Asp Ala	Asn Leu Val Phe Glu	Glu Phe Ala Arg His Asn		
371	376	381	386	
ctg aaa gat gca gga	gaa gct gag gag ggg	aag aga gac aag aat gac		1497
Leu Lys Asp Ala Gly	Glu Ala Glu Glu Gly	Lys Arg Asp Lys Asn Asp		
387	392	397	402	
att gat gag tga aga	tgctcggctca ggaatgccgga	aaatgacctg tagttaccag		1552
Ile Asp Glu *				
403				
tgcaacgagc aaagccccac	agtttagtcc tttggagtta	tgctgcgtat gaaaggatga		1612
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cggggcgggg ccgagtgcga acctgagccc caaatcccga cccaggcagg ggcggggccc      180
ggagcggggc cttggaggcc cagcccgcgc ggcgacgtct ccgcgtggcg tcacggcacc      240
gactgacggc caccaccc atg gcc gca gac cag cgc ccg aag gcc gac acg      291
                    Met Ala Ala Asp Gln Arg Pro Lys Ala Asp Thr
                      1             5

ctg gcc ctg agg caa cgg ctc atc agc tct tcc tgc aga ctc ttt ttt      339
Leu Ala Leu Arg Gln Arg Leu Ile Ser Ser Ser Cys Arg Leu Phe Phe
 12             17             22             27

ccc gag gat cct gtt aag att gtc cgg gcc caa ggg cag tac atg tac      387
Pro Glu Asp Pro Val Lys Ile Val Arg Ala Gln Gly Gln Tyr Met Tyr
 28             33             38             43

gat gaa cag ggg gca gaa tac atc gat tgc atc agc aat gtg gcg cac      435
Asp Glu Gln Gly Ala Glu Tyr Ile Asp Cys Ile Ser Asn Val Ala His
 44             49             54             59

gtt ggg cac tgc cac cct ctc gtg gtc caa gca gca cat gag cag aac      483
Val Gly His Cys His Pro Leu Val Val Gln Ala Ala His Glu Gln Asn
 60             65             70             75

cag gtg ctc aac acc aac agc cgg tac ctg cat gac aac atc gtg gac      531
Gln Val Leu Asn Thr Asn Ser Arg Tyr Leu His Asp Asn Ile Val Asp
 76             81             86             91

tat gcg cag agg ctg tca gag acc ctg ccg gag cag ctc tgt gtg ttc      579
Tyr Ala Gln Arg Leu Ser Glu Thr Leu Pro Glu Gln Leu Cys Val Phe
 92             97             102            107

tat ttc ctg aat tct ggg tca gaa gcc aat gac ctg gcc ctg agg ctg      627
Tyr Phe Leu Asn Ser Gly Ser Glu Ala Asn Asp Leu Ala Leu Arg Leu
108            113            118            123

gct cgc cac tac acg gga cac cag gac gtg gtg gta tta gat cat gcg      675
Ala Arg His Tyr Thr Gly His Gln Asp Val Val Val Leu Asp His Ala
124            129            134            139

tat cac ggc cac ctg agc tcc ctg att gac atc agt ccc tac aag ttc      723
Tyr His Gly His Leu Ser Ser Leu Ile Asp Ile Ser Pro Tyr Lys Phe
140            145            150            155

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cgc aac ctg gat ggc cag aag gag tgg gtc cac gtg gca cct ctc cca	771
Arg Asn Leu Asp Gly Gln Lys Glu Trp Val His Val Ala Pro Leu Pro	
156 161 166 171	
gac acc tac cgg ggc ccc tac cgg gag gac cac ccc aac cca gct atg	819
Asp Thr Tyr Arg Gly Pro Tyr Arg Glu Asp His Pro Asn Pro Ala Met	
172 177 182 187	
gcc tat gcc aac gag gtg aaa cgt gtg gtc agc agt gca cag gag aag	867
Ala Tyr Ala Asn Glu Val Lys Arg Val Val Ser Ser Ala Gln Glu Lys	
188 193 198 203	
ggc agg aag att gca gcc ttc ttc gct gag tct ctg ccc agt gtg gga	915
Gly Arg Lys Ile Ala Ala Phe Phe Ala Glu Ser Leu Pro Ser Val Gly	
204 209 214 219	
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Gly Gln Ile Ile Pro Pro Ala Gly Tyr Phe Ser Gln Val Ala Glu His	
220 225 230 235	
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Ile Arg Lys Ala Gly Gly Val Phe Val Ala Asn Glu Ile Gln Val Gly	
236 241 246 251	
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Phe Gly Arg Val Gly Lys His Phe Trp Ala Phe Gln Leu Gln Gly Lys	
252 257 262 267	
gac ttc gtc cct gac atc gtc acc atg ggc aag tcc att ggc aac ggc	1107
Asp Phe Val Pro Asp Ile Val Thr Met Gly Lys Ser Ile Gly Asn Gly	
268 273 278 283	
cac cct gtt gcc tgc gtg gcc gca acc cag cct gtg gcg agg gca ttt	1155
His Pro Val Ala Cys Val Ala Ala Thr Gln Pro Val Ala Arg Ala Phe	
284 289 294 299	
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Glu Ala Thr Gly Val Glu Tyr Phe Asn Thr Phe Gly Gly Ser Pro Val	
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Ser Cys Ala Val Gly Leu Ala Val Leu Asn Val Leu Glu Lys Glu Gln	
316 321 326 331	
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Leu Gln Asp His Ala Thr Ser Val Gly Ser Phe Leu Met Gln Leu Leu	
332 337 342 347	
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Gly Gln Gln Lys Ile Lys His Pro Ile Val Gly Asp Val Arg Gly Val	
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Gly Leu Phe Ile Gly Val Asp Leu Ile Lys Asp Glu Ala Thr Arg Thr	
364 369 374 379	

cca gca act gaa gag gct gcc tac ttg gta tca agg ctg aag gag aac	1443
Pro Ala Thr Glu Glu Ala Ala Tyr Leu Val Ser Arg Leu Lys Glu Asn	
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Tyr Val Leu Leu Ser Thr Asp Gly Pro Gly Arg Asn Ile Leu Lys Phe	
396 401 406 411	
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Lys Pro Pro Met Cys Phe Ser Leu Asp Asn Ala Arg Gln Val Val Ala	
412 417 422 427	
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Lys Leu Asp Ala Ile Leu Thr Asp Met Glu Lys Val Arg Ser Cys	
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Glu Thr Leu Arg Leu Gln Pro *	
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Met Leu Ser Ser Arg Ala Glu Ala Ala Met Thr Ala	
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Ala Asp Arg Ala Ile Gln Arg Phe Leu Arg Thr Gly Ala Ala Val Arg	
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tat aaa gtc atg aag aac tgg gga gtt ata ggt gga att gct gct gct	204
Tyr Lys Val Met Lys Asn Trp Gly Val Ile Gly Gly Ile Ala Ala Ala	
29 34 39 44	
ctt gca gca gga ata tat gtt att tgg ggt ccc att aca gaa aga aag	252
Leu Ala Ala Gly Ile Tyr Val Ile Trp Gly Pro Ile Thr Glu Arg Lys	
45 50 55 60	
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Lys Arg Arg Lys Gly Leu Val Pro Gly Leu Val Asn Leu Gly Asn Thr	
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Cys Phe Met Asn Ser Leu Leu Gln Gly Leu Ser Ala Cys Pro Ala Phe	
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Ile Gly Trp Leu Glu Glu Phe Thr Ser Gln Tyr Ser Arg Asp Gln Lys	
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Glu Pro Pro Ser His Gln Tyr Leu Ser Leu Thr Leu Leu His Leu Leu	
109 114 119 124	
aaa gcc ttg tcc tgc caa gaa gtt act gat gat gag gtc tta cat gca	492
Lys Ala Leu Ser Cys Gln Glu Val Thr Asp Asp Glu Val Leu His Ala	
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Ser Cys Leu Leu Asp Val Leu Arg Met Tyr Arg Trp Gln Ile Ser Ser	
141 146 151 156	
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Phe Glu Glu Gln Asp Ala His Glu Leu Phe His Val Ile Thr Ser Ser	
157 162 167 172	
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Leu Glu Asp Glu Arg Asp Arg Gln Pro Arg Val Thr His Leu Phe Asp	
173 178 183 188	
gtg cat tcc ctg gag cag cag tca gaa ata act ccc aaa caa att acc	684
Val His Ser Leu Glu Gln Gln Ser Glu Ile Thr Pro Lys Gln Ile Thr	
189 194 199 204	
tgc cgc aca aga ggg tca cct cac ccc aca tcc aat cac tgg aag tct	732
Cys Arg Thr Arg Gly Ser Pro His Pro Thr Ser Asn His Trp Lys Ser	
205 210 215 220	
caa cat cct ttt cat gga aga ctc act agt aat atg gtc tgc aaa cac	780
Gln His Pro Phe His Gly Arg Leu Thr Ser Asn Met Val Cys Lys His	
221 226 231 236	
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Cys Glu His Gln Ser Pro Val Arg Phe Asp Thr Phe Asp Ser Leu Ser	

237	242	247	252	
cta agt att cca gcc gcc aca tgg ggt cac cca ttg acc ctg gac cac				876
Leu Ser Ile Pro Ala Ala Thr Trp Gly His Pro Leu Thr Leu Asp His				
253	258	263	268	
tgc ctt cac cac ttc atc tca tca gaa tca gtg cgg gat gtt gtg tgt				924
Cys Leu His His Phe Ile Ser Ser Glu Ser Val Arg Asp Val Val Cys				
269	274	279	284	
gac aac tgt aca aag att gaa gcc aag gga acg ttg aac ggg gaa aag				972
Asp Asn Cys Thr Lys Ile Glu Ala Lys Gly Thr Leu Asn Gly Glu Lys				
285	290	295	300	
gtg gaa cac cag agg acc act ttt gtt aaa cag tta aaa cta ggg aag				1020
Val Glu His Gln Arg Thr Thr Phe Val Lys Gln Leu Lys Leu Gly Lys				
301	306	311	316	
ctc cct cag tgt ctc tgc atc cac cta cag cgg ctg agc tgg tcc agc				1068
Leu Pro Gln Cys Leu Cys Ile His Leu Gln Arg Leu Ser Trp Ser Ser				
317	322	327	332	
cac ggc acg cct ctg aag cgg cat gag cac gtg cag ttc aat gag ttc				1116
His Gly Thr Pro Leu Lys Arg His Glu His Val Gln Phe Asn Glu Phe				
333	338	343	348	
ctg atg atg gac att tac aag tac cac ctc ctt gga cat aaa cct agt				1164
Leu Met Met Asp Ile Tyr Lys Tyr His Leu Leu Gly His Lys Pro Ser				
349	354	359	364	
caa cac aac cct aaa ctg aac aag aac cca ggg cct aca ctg gag ctg				1212
Gln His Asn Pro Lys Leu Asn Lys Asn Pro Gly Pro Thr Leu Glu Leu				
365	370	375	380	
cag gat ggg cgg gga gcc cca cac cag ttc tga atcagcca ggggccccca				1263
Gln Asp Gly Pro Gly Ala Pro His Gln Phe *				
381	386	391		
aaacacagat ttttatgaat ggcgcctgct ccccatcttt attgccaacg ctgtcagcgc				1323
cgatgccett cctctccca gttgttcccg actacagctc ctccacatac ctcttccggc				1383
tgatgggcag ttgtcgtcca ccatgggaga catggcactc tgggacactt tgttcattta				1443
ccgacgggtcc ccaccttttt gccaggggaa contcttttc aattaggcan tcagttggct				1503
gttgggtttt ccgatggaca ttgttccgna aggccaggct tgcaggaggg totcgttont				1563
tccagcg				1570

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 <211> 2183
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 <213> Homo sapiens

<220>
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 <222> (291) .. (1805)

<400> 93

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acttggaat gtgaacgcaa gaagcaggct tgattttttt ttctcccccc ttctctctct	180
ctctctctct ctctcttct ctctccctct ttctctctc tcacccacac tcacgcacac	240
ctccaaaccg cacaccaga cgcacacgca taccacagcg cccggcagtt atg tat	296
	Met Tyr
	1
tct ccg ctc tgt ctc acc cag gat gaa ttt cat cct ttc atc gaa gca	344
Ser Pro Leu Cys Leu Thr Gln Asp Glu Phe His Pro Phe Ile Glu Ala	
3 8 13 18	
ctt ctg ccc cac gtc cga gcc ttt gcc tac aca tgg ttc aac ctg cag	392
Leu Leu Pro His Val Arg Ala Phe Ala Tyr Thr Trp Phe Asn Leu Gln	
19 24 29 34	
gcc cga aaa cga aaa tac ttc aaa aaa cat gaa aag cgt atg tca aaa	440
Ala Arg Lys Arg Lys Tyr Phe Lys Lys His Glu Lys Arg Met Ser Lys	
35 40 45 50	
gaa gaa gag aga gcc gtg aag gat gaa ttg cta agt gaa aaa cca gag	488
Glu Glu Glu Arg Ala Val Lys Asp Glu Leu Leu Ser Glu Lys Pro Glu	
51 56 61 66	
gtc aag cag aag tgg gca tct cga ctt ctg gca aag ttg cgg aaa gat	536
Val Lys Gln Lys Trp Ala Ser Arg Leu Leu Ala Lys Leu Arg Lys Asp	
67 72 77 82	
atc cga ccc gaa tat cga gag gat ttt gtt ctt aca gtt aca ggg aaa	584
Ile Arg Pro Glu Tyr Arg Glu Asp Phe Val Leu Thr Val Thr Gly Lys	
83 88 93 98	
aaa cct cca tgt tgt gtt ctt tcc aac cca gac cag aaa ggc aag atg	632
Lys Pro Pro Cys Cys Val Leu Ser Asn Pro Asp Gln Lys Gly Lys Met	
99 104 109 114	
cga aga att gac tgc ctc cgc cag gca gat aaa gtc tgg agg ttg gac	680
Arg Arg Ile Asp Cys Leu Arg Gln Ala Asp Lys Val Trp Arg Leu Asp	
115 120 125 130	
ctt gtt atg gtg att ttg ttt aaa ggt att ccg ctg gaa agt act gat	728
Leu Val Met Val Ile Leu Phe Lys Gly Ile Pro Leu Glu Ser Thr Asp	
131 136 141 146	
ggc gag cgc ctt gta aag tcc cca caa tgc tct aat cca ggg ctc tgt	776
Gly Glu Arg Leu Val Lys Ser Pro Gln Cys Ser Asn Pro Gly Leu Cys	
147 152 157 162	

gtc caa ccc cat cac ata ggg gtt tct gtt aag gaa ctc gat tta tat	824
Val Gln Pro His His Ile Gly Val Ser Val Lys Glu Leu Asp Leu Tyr	
163 168 173 178	
ttg gca tac ttt gtg cat gca gca gat tca agt caa tct gaa agt ccc	872
Leu Ala Tyr Phe Val His Ala Ala Asp Ser Ser Gln Ser Glu Ser Pro	
179 184 189 194	
agc cag cca agt gac gct gac att aag gac cag cca gaa aat gga cat	920
Ser Gln Pro Ser Asp Ala Asp Ile Lys Asp Gln Pro Glu Asn Gly His	
195 200 205 210	
ttg ggc ttc cag gac agt ttt gtc aca tca ggt gtt ttt agt gtc act	968
Leu Gly Phe Gln Asp Ser Phe Val Thr Ser Gly Val Phe Ser Val Thr	
211 216 221 226	
gag cta gta aga gtg tca cag aca cca ata gct gca gga act ggc cca	1016
Glu Leu Val Arg Val Ser Gln Thr Pro Ile Ala Ala Gly Thr Gly Pro	
227 232 237 242	
aat ttt tct ctc tca gat ttg gaa agt tct tca tac tac agc atg agt	1064
Asn Phe Ser Leu Ser Asp Leu Glu Ser Ser Ser Tyr Tyr Ser Met Ser	
243 248 253 258	
cca gga gca atg agg agg tct tta ccc agc aca tcc tct acg agc tcc	1112
Pro Gly Ala Met Arg Arg Ser Leu Pro Ser Thr Ser Ser Thr Ser Ser	
259 264 269 274	
aca aag cgc ctc aag tct gtg gag gat gaa atg gac agt cct ggt gag	1160
Thr Lys Arg Leu Lys Ser Val Glu Asp Glu Met Asp Ser Pro Gly Glu	
275 280 285 290	
gag cca ttt tat aca ggc caa ggg cgc tcc cca gga agt ggc agt cag	1208
Glu Pro Phe Tyr Thr Gly Gln Gly Arg Ser Pro Gly Ser Gly Ser Gln	
291 296 301 306	
tca agt gga tgg cat gaa gtg gag cca gga atg cca tct cca acc aca	1256
Ser Ser Gly Trp His Glu Val Glu Pro Gly Met Pro Ser Pro Thr Thr	
307 312 317 322	
ctg aag aag tcg gag aag tct ggt ttc agc agc ccc tcc cct tca cag	1304
Leu Lys Lys Ser Glu Lys Ser Gly Phe Ser Ser Pro Ser Pro Ser Gln	
323 328 333 338	
acc tcc tcc ctg gga acg gcg ttc aca cag cat cac cga cct gtc att	1352
Thr Ser Ser Leu Gly Thr Ala Phe Thr Gln His His Arg Pro Val Ile	
339 344 349 354	
aca gga ccc aga gca agt cca cat gca aca cca tcg act ctt cat ttc	1400
Thr Gly Pro Arg Ala Ser Pro His Ala Thr Pro Ser Thr Leu His Phe	
355 360 365 370	
ccg aca tca ccc att atc cag cag cct ggg cct tac ttc tca cac cca	1448
Pro Thr Ser Pro Ile Ile Gln Gln Pro Gly Pro Tyr Phe Ser His Pro	
371 376 381 386	

gcc atc cgc tat cac cct cag gag acg ctg aaa gaa ttt gtc caa ctt	1496
Ala Ile Arg Tyr His Pro Gln Glu Thr Leu Lys Glu Phe Val Gln Leu	
387 392 397 402	
gtc tgc cct gat gct ggt cag cag gct gga cag ccc aat ggg agc agc	1544
Val Cys Pro Asp Ala Gly Gln Gln Ala Gly Gln Pro Asn Gly Ser Ser	
403 408 413 418	
caa ggc aag gtg cac aac cca ttc ctt ccc acc cca atg ttg cca ccg	1592
Gln Gly Lys Val His Asn Pro Phe Leu Pro Thr Pro Met Leu Pro Pro	
419 424 429 434	
cca ccg cca cca ccg atg gcc agg cct gtg cct ctg ccg gtg cca gac	1640
Pro Pro Pro Pro Pro Met Ala Arg Pro Val Pro Leu Pro Val Pro Asp	
435 440 445 450	
aca aag cct cca acc acg tca aca gaa gga ggt gca gcc tcc ccc acg	1688
Thr Lys Pro Pro Thr Thr Ser Thr Glu Gly Gly Ala Ala Ser Pro Thr	
451 456 461 466	
tca cca acc tac tcg aca ccc agc acc tcc ccc gca aac cga ttc gtc	1736
Ser Pro Thr Tyr Ser Thr Pro Ser Thr Ser Pro Ala Asn Arg Phe Val	
467 472 477 482	
agt gtt gga cca cgg gat cca agc ttt gta aat atc cct caa cag aca	1784
Ser Val Gly Pro Arg Asp Pro Ser Phe Val Asn Ile Pro Gln Gln Thr	
483 488 493 498	
cag tcc tgg tac ctg gga taa aa gttgcagcgt cccaccatcc accagacaga	1837
Gln Ser Trp Tyr Leu Gly *	
499 504	
ccacctgata ccttctcaac tctgtaacat ggacgcaacc tcaaccacagc gcagttacaa	1897
cttcactatc agcgggaagg gagaaaaacc gattcaaadc aacttgtaca tggaacacagc	1957
aagcattatg gtcaaacagc aaaggccata accttttggg attttttttt ttttaaaata	2017
ctttagggac tgttggtatt ctcatatggt gctggaaatg gttgggcttt ggaacatttg	2077
aagtgtttcc atgtagcgtg catttaaggt acgtggctag ggaggactac cctgctcact	2137
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (265)..(2067)

<400> 94

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aag gat cct gac cag gct gca agc tac acc gtg gag cca gac ccc cga	915
Lys Asp Pro Asp Gln Ala Ala Ser Tyr Thr Val Glu Pro Asp Pro Arg	
202 207 212 217	
tcc agg cac ctg gcc ctc agc ggg ccc acc ttt ggt atc att gtg aag	963
Ser Arg His Leu Ala Leu Ser Gly Pro Thr Phe Gly Ile Ile Val Lys	
218 223 228 233	
cac ttc ccc aag ctg ctg ccc aag gtc ctg gtc cag ggc act gtc ttt	1011
His Phe Pro Lys Leu Leu Pro Lys Val Leu Val Gln Gly Thr Val Phe	
234 239 244 249	
gcc cgc atg gcc cct gag cag aag aca gag ctg gtg tgc gag cta cag	1059
Ala Arg Met Ala Pro Glu Gln Lys Thr Glu Leu Val Cys Glu Leu Gln	
250 255 260 265	
aag ctt cag tac tgc gtg ggc atg tgc gga gac ggt gcc aat gac tgt	1107
Lys Leu Gln Tyr Cys Val Gly Met Cys Gly Asp Gly Ala Asn Asp Cys	
266 271 276 281	
ggg gcc ctg aag gcg gct gat gtc ggc atc tcg ctg tcc cag gca gaa	1155
Gly Ala Leu Lys Ala Ala Asp Val Gly Ile Ser Leu Ser Gln Ala Glu	
282 287 292 297	
gcc tca gtg gtc tca ccc ttc acc tcg agc atg gcc agt att gag tgc	1203
Ala Ser Val Val Ser Pro Phe Thr Ser Ser Met Ala Ser Ile Glu Cys	
298 303 308 313	
gtg ccc atg gtc atc agg gag ggg cgc tgt tcc ctt gac act tcg ttc	1251
Val Pro Met Val Ile Arg Glu Gly Arg Cys Ser Leu Asp Thr Ser Phe	
314 319 324 329	
agc gtc ttc aag tac atg gct ctg tac agc ctg acc cag ttc atc tcc	1299
Ser Val Phe Lys Tyr Met Ala Leu Tyr Ser Leu Thr Gln Phe Ile Ser	
330 335 340 345	
gtc ctg atc ctc tac acg atc aac acc aac ctg ggt gac ctg cag ttc	1347
Val Leu Ile Leu Tyr Thr Ile Asn Thr Asn Leu Gly Asp Leu Gln Phe	
346 351 356 361	
ctg gcc atc gac ctg gtc atc acc acc aca gtg gca gtg ctc atg agc	1395
Leu Ala Ile Asp Leu Val Ile Thr Thr Thr Val Ala Val Leu Met Ser	
362 367 372 377	
cgc acg ggg cca gcg ctg gtc ctg gga cgg gtg cgg cca ccg ggg gcg	1443
Arg Thr Gly Pro Ala Leu Val Leu Gly Arg Val Arg Pro Pro Gly Ala	
378 383 388 393	
ctg ctc agc gtg ccc gtg ctc agc agc ctg ctg ctg cag atg gtc ctg	1491
Leu Leu Ser Val Pro Val Leu Ser Ser Leu Leu Leu Gln Met Val Leu	
394 399 404 409	
gtg acc ggc gtg cag cta ggg ggc tac ttc ctg acc ctg gcc cag cca	1539
Val Thr Gly Val Gln Leu Gly Gly Tyr Phe Leu Thr Leu Ala Gln Pro	

410	415	420	425	
tgg ttc gtg cct ctg	aac agg aca gtg gcc	gca cca gac aac ctg	ccc	1587
Trp Phe Val Pro Leu	Asn Arg Thr Val Ala	Ala Pro Asp Asn Leu	Pro	
426	431	436	441	
aac tac gag aac acc	gtg gtc ttc tct ctg	tcc agc ttc cag tac	ctc	1635
Asn Tyr Glu Asn Thr	Val Val Phe Ser Leu	Ser Ser Phe Gln Tyr	Leu	
442	447	452	457	
atc ctg gct gca gcc	gtg tcc aag ggg gcg	ccc ttc cgc cgg ccg	ctc	1683
Ile Leu Ala Ala Ala	Val Ser Lys Gly Ala	Pro Phe Arg Arg Pro	Leu	
458	463	468	473	
tac acc aat gag cgt	gct aga cca gtg cct	ccc cgc ctg cct gcg	ccg	1731
Tyr Thr Asn Glu Arg	Ala Arg Pro Val Pro	Pro Arg Leu Pro Ala	Pro	
474	479	484	489	
cct ccg gcc caa gcg	ggc ctc caa gaa gcg	ctt caa gca gct gga	acg	1779
Pro Pro Ala Gln Ala	Gly Leu Gln Glu Ala	Leu Gln Ala Ala Gly	Thr	
490	495	500	505	
aga gct ggc cga gca	gcc ctg gcc gcc gct	gcc cgc cgg ccc cct	gag	1827
Arg Ala Gly Arg Ala	Ala Leu Ala Ala Ala	Ala Arg Arg Pro Pro	Glu	
506	511	516	521	
gta gtg cag gcc cac	ggg cac ccc aga cac	tgg aac tcc ctg cct	ctg	1875
Val Val Gln Ala His	Gly His Pro Arg His	Trp Asn Ser Leu Pro	Leu	
522	527	532	537	
agc cac caa ctg gac	ccc tct cca gca aca	cca ccg cca cca cct	ccc	1923
Ser His Gln Leu Asp	Pro Ser Pro Ala Thr	Pro Pro Pro Pro Pro	Pro	
538	543	548	553	
aca tcc ctg agg ttg	gcg act gtc tac act	cct ccc ccg aga cca	ccc	1971
Thr Ser Leu Arg Leu	Ala Thr Val Tyr Thr	Pro Pro Pro Arg Pro	Pro	
554	559	564	569	
cca ccc tgg gga agc	gtt gac tac tgt ccc	cta cct tgg acc atc	ccg	2019
Pro Pro Trp Gly Ser	Val Asp Tyr Cys Pro	Leu Pro Trp Thr Ile	Pro	
570	575	580	585	
cgt agg ggt ggc agc	ccc cag ctc ccc tca	gtg ctg ctg tca gtg	tag	2067
Arg Arg Gly Gly Ser	Pro Gln Leu Pro Ser	Val Leu Leu Ser Val	*	
586	591	596	601	
caaataaagt catgatattt	tcttgga aaa aaaaaaaa			2106

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<220>

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<222> (808) .. (966)

<220>
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<222> (1) ... (1555)
<223> n = a,t,c or g

<400> 95

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ccctgcatct ggagccaccc acctggagga actcatcggg ctctctctgt agacgggaaa 180
aaacaaacgc accacaaacc gacaatcaaa gccatggcgg atgcggggcc gccaccagtt 240
catctccctg gagccaggcg gctccaggcc tctctcacct ttcttgtgtg gaacgcaggc 300
ttgcaatggt ctgagcccac ctgtcctcgg gctagtccca ttttcaaaag ttctgagtac 360
gcaggtgaga agacaccccc acaaaacccc aaaactagcc ttaggctgtt tttccccaac 420
acaacgcacc tccacacccc acaccgccag cagcccacct gggtagccaa agtgagctgc 480
caggggggttc cgaggaccct gcctgggtgcc ttccagctca taaggagagg ccaagagcca 540
tggggaggaa gccacacggc ccagcgctca gggcttgtca tccaagagtg agagaagtgg 600
ggagagaggt gacggagggg ggagtgggtg gtggcgctna aataggctag ccagagagag 660
aggtgcttgt gggattctgc tggctggagc caggaggtaa gtgtgaacag ggaggccaaa 720
gatgaaagtt atctgaaaga gcccgtaccc cctataaaca cggcagagga atgtcttaag 780
agccaccaac agtaattccc tttccggg atg tta aca ggt tat ttg tat ctt 831
Met Leu Thr Gly Tyr Leu Tyr Leu
1 5
atg tgg cgt cgt aaa gca ttc tgg agt ggc aca caa cgt cat ccc ctt 879
Met Trp Arg Arg Lys Ala Phe Trp Ser Gly Thr Gln Arg His Pro Leu
9 14 19 24
ccc ggt ggt ctg aag agg agg agg aga cca ggg agg ggt cct tgg cca 927
Pro Gly Gly Leu Lys Arg Arg Arg Pro Gly Arg Gly Pro Trp Pro
25 30 35 40
gcc cct ggc ggc caa ggg gtg ggt cct tct gct cta tag aaggcaggaa 976
Ala Pro Gly Gly Gln Gly Val Gly Pro Ser Ala Leu *
41 46 51
gcccgccagc taaccgcccg ggtcaggggg agcaggcctg atctctccca agcctgtgac 1036
cgaggctctg cctgatgtcc aaggggcccc tgtgccagta ccccacttc ccacgcccc 1096
cagccttctt cacctccaga atcagccgcc caggtgcagc actatctcct ttctttttct 1156

tggaagccgt ctgaggggcc tgagtgcgg gctgaccgt cccgctacc gctgctgcc 1216
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 cccacctgct tcgctcccaa cctcaccacc aggcaagggt ttccagaaaa ccgagacacg 1336
 caaacaccca ccaccacgac aacaacacaa accaaagtgc actgcgaacc gccctttggc 1396
 ctcctttctg taggtgcctt gaaacttcaa tgttgagatg aatgtgatta actacttggt 1456
 cctattttct gtttgtctat tttcatagaa aatgtccaag tccacttgcc ttgttcttcc 1516
 ttgaaataaa tagaaagatt taactttaaa aaaaaaaaaa 1555

<210> 96
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 <213> Homo sapiens

<220>
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 <222> (1)..(2205)

<400> 96

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 Met His Glu Ser Val His Val Gly Phe Leu Ser Ile Pro Ser Lys Glu
 1 5 10

aaa ggc ctt ggc ctc ctc cag ctg ggt ctg ctc ctt cct ttg aac ccc 96
 Lys Gly Leu Gly Leu Leu Gln Leu Gly Leu Leu Leu Pro Leu Asn Pro
 17 22 27 32

atc ggt acc tat gcc cac acc ttt cag agc ttt cct gat cag tgt caa 144
 Ile Gly Thr Tyr Ala His Thr Phe Gln Ser Phe Pro Asp Gln Cys Gln
 33 38 43 48

cat gct gct ctt cct ctt aca aaa tgt acc atc aat aca gcc cag gca 192
 His Ala Ala Leu Pro Leu Thr Lys Cys Thr Ile Asn Thr Ala Gln Ala
 49 54 59 64

cat ggc tcc cac aaa gct agc cac tta tat agt atg ggt cac atc aaa 240
 His Gly Ser His Lys Ala Ser His Leu Tyr Ser Met Gly His Ile Lys
 65 70 75 80

aat gac tcc agc aca atc att cat aca gac ttc tct cac act aaa cct 288
 Asn Asp Ser Ser Thr Ile Ile His Thr Asp Phe Ser His Thr Lys Pro
 81 86 91 96

tta aac aag caa ggt tca gta gct aca gaa ctc tcc atc atc atc atc 336
 Leu Asn Lys Gln Gly Ser Val Ala Thr Glu Leu Ser Ile Ile Ile Ile
 97 102 107 112

atc atc atc tgg ttg ctt ttg gca agg ttc agt agc tac aga act ctc 384
 Ile Ile Ile Trp Leu Leu Leu Ala Arg Phe Ser Ser Tyr Arg Thr Leu

113	118	123	128	
ctt cat cat cat cat cat ctg gtt gct ttt	ggc aag caa ggt tca gta	432		
Leu His His His His His Leu Val Ala Phe	Gly Lys Gln Gly Ser Val			
129	134	139	144	
gct aca gaa ctc tcc tcc tcc tcc tcc tcc	tca tca tca tca tca	480		
Ala Thr Glu Leu Ser Ser Ser Ser Ser Ser	Ser Ser Ser Ser Ser Ser			
145	150	155	160	
tct ggt tgc ttt cag caa ggt tca gta gct	aca gaa ctc tcc atc atc	528		
Ser Gly Cys Phe Gln Gln Gly Ser Val Ala	Thr Glu Leu Ser Ile Ile			
161	166	171	176	
atc atc atc atc atc atc atc atc atc atc	tgg ttg ctt ttg gca	576		
Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile	Ile Trp Leu Leu Leu Ala			
177	182	187	192	
agg ttc agt agc tac aga act ctc ctc ctc	ctc ctc ctc ctc ctc ctc	624		
Arg Phe Ser Ser Tyr Arg Thr Leu Leu Leu	Leu Leu Leu Leu Leu Leu			
193	198	203	208	
ctc ctc atc atc atc atc atc atc tgg ttg	ctt tta gca agg ttc agt	672		
Leu Leu Ile Ile Ile Ile Ile Ile Ile Trp	Leu Leu Ala Arg Phe Ser			
209	214	219	224	
agc tac aga act ctc ctc ctc ctc ctc ctc	ctc ctc atc atc atc atc	720		
Ser Tyr Arg Thr Leu Leu Leu Leu Leu Leu	Leu Ile Ile Ile Ile Ile			
225	230	235	240	
atc tgg ttg ctt tca gca agg ttc agt agc	tac aga act ctc ctt cat	768		
Ile Trp Leu Leu Ser Ala Arg Phe Ser Ser	Tyr Arg Thr Leu Leu His			
241	246	251	256	
cat cat caa cat cat cat ctg gtt gct ttt	ggc aag caa ggt tca gta	816		
His His Gln His His His Leu Val Ala Phe	Gly Lys Gln Gly Ser Val			
257	262	267	272	
gct aca gaa ctc tcc tcc tcc tcc tcc tcc	tca tca tca tca tca	864		
Ala Thr Glu Leu Ser Ser Ser Ser Ser Ser	Ser Ser Ser Ser Ser Ser			
273	278	283	288	
tct ggt tgc ttt cag caa ggt tca gta gct	aca gaa ctc tcc atc atc	912		
Ser Gly Cys Phe Gln Gln Gly Ser Val Ala	Thr Glu Leu Ser Ile Ile			
289	294	299	304	
atc atc atc atc atc atc atc atc atc atc	tgg ttg ctt ttg gca	960		
Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile	Ile Trp Leu Leu Leu Ala			
305	310	315	320	
agg ttc agt agc tac aga act ctc ctt cat	cat cat cat cat cat cat	1008		
Arg Phe Ser Ser Tyr Arg Thr Leu Leu His	His His His His His His			
321	326	331	336	
ctg gtt gct ttt ggc aag caa ggt tca gta	gct aca gaa ctc tcc atc	1056		
Leu Val Ala Phe Gly Lys Gln Gly Ser Val	Ala Thr Glu Leu Ser Ile			
337	342	347	352	

atc atc atc atc atc atc atc atc atc atc atc atc tgg ttg ctt ttg Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile Ile Trp Leu Leu Leu 353 358 363 368	1104
gca agg ttc agt agc tac aga act ctc ctt cat cat cat cat cat cat Ala Arg Phe Ser Ser Tyr Arg Thr Leu Leu His His His His His His 369 374 379 384	1152
cat ctg gtt gct ttt ggc aag gcc ctg gca aga att att tgg ctt tac His Leu Val Ala Phe Gly Lys Ala Leu Ala Arg Ile Ile Trp Leu Tyr 385 390 395 400	1200
cga aac acc tat tcc ata ggt aac caa ttc cag tca aaa atg cca gag Arg Asn Thr Tyr Ser Ile Gly Asn Gln Phe Gln Ser Lys Met Pro Glu 401 406 411 416	1248
tat tac tcc tca acc caa tgc cct atc tcc tta gtg gat tat aaa ctt Tyr Tyr Ser Ser Thr Gln Cys Pro Ile Ser Leu Val Asp Tyr Lys Leu 417 422 427 432	1296
act acg aca acc tgt ctt ctt tgg atc caa tcc ccg ccc aag tct gag Thr Thr Thr Thr Cys Leu Leu Trp Ile Gln Ser Pro Pro Lys Ser Glu 433 438 443 448	1344
tct tct ctc cca ggc tac aag ccc cca agt cct ggc agc tct atg ctt Ser Ser Leu Pro Gly Tyr Lys Pro Pro Ser Pro Gly Ser Ser Met Leu 449 454 459 464	1392
gac agc tcg ctg acc tcc acc tca tca gac cat tgg gtc gcc ctt ctc Asp Ser Ser Leu Thr Ser Thr Ser Ser Asp His Trp Val Ala Leu Leu 465 470 475 480	1440
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gag cct cga ccc ctc cta tac ccc ctc ccc gat ccc gca gtc ccc ttc Glu Pro Arg Pro Leu Leu Tyr Pro Leu Pro Asp Pro Ala Val Pro Phe 497 502 507 512	1536
tgg acc ttg cgg acc cct ctc agc ccc cgt acc ccc tac cgc ctc ttc Trp Thr Leu Arg Thr Pro Leu Ser Pro Arg Thr Pro Tyr Arg Leu Phe 513 518 523 528	1584
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gct gtc aat aag acg tgg acc tgc gag ccg ggg caa aag ggc ttc cgg Ala Val Asn Lys Thr Trp Thr Cys Glu Pro Gly Gln Lys Gly Phe Arg 561 566 571 576	1728

tct gcg gga aac tgg agg cta gcg gtg ggc gtg gac cgt cga ggt gac	1776
Ser Ala Gly Asn Trp Arg Leu Ala Val Gly Val Asp Arg Arg Gly Asp	
577 582 587 592	
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Trp Arg Leu Ser Asp Leu Leu Leu Phe Ala Asp Gln Ala Ala Val Gly	
593 598 603 608	
aat gac gga tgc cca gac cct gtg ggc gga gta aag gaa tca tgc act	1872
Asn Asp Gly Cys Pro Asp Pro Val Gly Gly Val Lys Glu Ser Cys Thr	
609 614 619 624	
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Asp Thr Arg Thr Leu Thr Glu Gly Arg Val Arg Leu Arg Ala Pro His	
625 630 635 640	
ctc gta gcc gaa agg agc gcg ttc cgg ggc agg cct ccg ggt act tcc	1968
Leu Val Ala Glu Arg Ser Ala Phe Arg Gly Arg Pro Pro Gly Thr Ser	
641 646 651 656	
cgc aga gga ccg ggc ttt ata ctc ttt gct cct ttt cct ccc cta aaa	2016
Arg Arg Gly Pro Gly Phe Ile Leu Phe Ala Pro Phe Pro Pro Leu Lys	
657 662 667 672	
gct gtg ctt gac ttc ttg gtg tac atg gat aaa ggc tac aat gaa gga	2064
Ala Val Leu Asp Phe Leu Val Tyr Met Asp Lys Gly Tyr Asn Glu Gly	
673 678 683 688	
aac att tta gaa ata ctc gcc tac ctg gta gtc cac aga tct tta gat	2112
Asn Ile Leu Glu Ile Leu Ala Tyr Leu Val Val His Arg Ser Leu Asp	
689 694 699 704	
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Phe Ile Gly Gln Gln Asn Leu Lys Gly Arg Glu Arg Glu Asn Lys Arg	
705 710 715 720	
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gcctgaggag atg agc tgg ccg cca tgc ggg gag att gcc agc cca cca 169
Met Ser Trp Pro Pro Ser Gly Glu Ile Ala Ser Pro Pro
1 5 10

gag ctg cca agc agc cca cct cct ggg ctt ccc gaa gtg gcc cca gat 217
Glu Leu Pro Ser Ser Pro Pro Pro Gly Leu Pro Glu Val Ala Pro Asp
14 19 24 29

gca acc tcc act ggc ctc cct gat acc ccc gca gct cca gaa acc agc 265
Ala Thr Ser Thr Gly Leu Pro Asp Thr Pro Ala Ala Pro Glu Thr Ser
30 35 40 45

acc aac tac cca gtg gag tgc acc gag ggg tct gca ggc ccc cag tct 313
Thr Asn Tyr Pro Val Glu Cys Thr Glu Gly Ser Ala Gly Pro Gln Ser
46 51 56 61

ctc ccc ttg cct att ctg gag ccg gtc aaa aac ccc tgc tct gtc aaa 361
Leu Pro Leu Pro Ile Leu Glu Pro Val Lys Asn Pro Cys Ser Val Lys
62 67 72 77

gac cag acg cca ctc caa ctt tct gta gaa gat acc acc tct cca aat 409
Asp Gln Thr Pro Leu Gln Leu Ser Val Glu Asp Thr Thr Ser Pro Asn
78 83 88 93

acc aag ccg tgc cca cct act ccc acc acc cca gaa aca tcc cct cct 457
Thr Lys Pro Cys Pro Pro Thr Pro Thr Thr Pro Glu Thr Ser Pro Pro
94 99 104 109

cct cct cct cct cct cct tca tct act cct tgt tca gct cac ctg acc 505
Pro Pro Pro Pro Pro Pro Ser Ser Thr Pro Cys Ser Ala His Leu Thr
110 115 120 125

ccc tcc tcc ctg ttc cct tcc tcc ctg gaa tca tca tgc gaa cag aaa 553
Pro Ser Ser Leu Phe Pro Ser Ser Leu Glu Ser Ser Ser Glu Gln Lys
126 131 136 141

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Phe Tyr Asn Phe Val Ile Leu His Ala Arg Ala Asp Glu His Ile Ala
142 147 152 157

ctg cgg gtt cgg gag aag ctg gag gcc ctt ggc gtg ccc gac ggg gcc 649
Leu Arg Val Arg Glu Lys Leu Glu Ala Leu Gly Val Pro Asp Gly Ala
158 163 168 173

acc ttc tgc gag gat ttc cag gtg ccg ggg cgc ggg gag ctg agc tgc 697
Thr Phe Cys Glu Asp Phe Gln Val Pro Gly Arg Gly Glu Leu Ser Cys
174 179 184 189

ctg cag gac gcc ata gac cac tca gct ttc atc atc cta ctt ctc acc 745
Leu Gln Asp Ala Ile Asp His Ser Ala Phe Ile Ile Leu Leu Leu Thr
190 195 200 205

tcc aac ttc gac tgt cgc ctg agc ctg cac cag gtg aac caa gcc atg	793
Ser Asn Phe Asp Cys Arg Leu Ser Leu His Gln Val Asn Gln Ala Met	
206 211 216 221	
atg agc aac ctc acg cga cag ggg tcg cca gac tgt gtc atc ccc ttc	841
Met Ser Asn Leu Thr Arg Gln Gly Ser Pro Asp Cys Val Ile Pro Phe	
222 227 232 237	
ctg ccc ctg gag agc tcc ccg gcc cgg ctc agc tcc gac acg gcc agc	889
Leu Pro Leu Glu Ser Ser Pro Ala Arg Leu Ser Ser Asp Thr Ala Ser	
238 243 248 253	
ctg ctc tcc ggg ctg gtg cgg ctg gac gaa cac tcc cag atc ttc gcc	937
Leu Leu Ser Gly Leu Val Arg Leu Asp Glu His Ser Gln Ile Phe Ala	
254 259 264 269	
agg aag gtg gcc aac acc ttc aag ccc cac agg ctt cag gcc cga aag	985
Arg Lys Val Ala Asn Thr Phe Lys Pro His Arg Leu Gln Ala Arg Lys	
270 275 280 285	
gcc atg tgg agg aag gaa cag gac acc cga gcc ctg cgg gaa cag agc	1033
Ala Met Trp Arg Lys Glu Gln Asp Thr Arg Ala Leu Arg Glu Gln Ser	
286 291 296 301	
caa cac ctg gat ggt gag cgg atg cag gcg gcg gca ctg aac gca gcc	1081
Gln His Leu Asp Gly Glu Arg Met Gln Ala Ala Leu Asn Ala Ala	
302 307 312 317	
tac tca gcc tac ctc cag agc tac ttg tcc tac cag gca cag atg gag	1129
Tyr Ser Ala Tyr Leu Gln Ser Tyr Leu Ser Tyr Gln Ala Gln Met Glu	
318 323 328 333	
cag ctc cag gtg gct ttt ggg agc cac atg tca ttt ggg act ggg gcg	1177
Gln Leu Gln Val Ala Phe Gly Ser His Met Ser Phe Gly Thr Gly Ala	
334 339 344 349	
ccc tat ggg gct cga atg ccc ttt ggg ggc cag gtg ccc ctg gga gcc	1225
Pro Tyr Gly Ala Arg Met Pro Phe Gly Gly Gln Val Pro Leu Gly Ala	
350 355 360 365	
ccg cca ccc ttt ccc act tgg ccg ggg tgc ccg cag ccg cca ccc ctg	1273
Pro Pro Pro Phe Pro Thr Trp Pro Gly Cys Pro Gln Pro Pro Pro Leu	
366 371 376 381	
cac gca tgg cag gct ggc acc ccc cca ccg ccc tcc cca cag cca gca	1321
His Ala Trp Gln Ala Gly Thr Pro Pro Pro Pro Ser Pro Gln Pro Ala	
382 387 392 397	
gcc ttt cca cag tca ctg ccc ttc ccg cag tcc cca gcc ttc cct acg	1369
Ala Phe Pro Gln Ser Leu Pro Phe Pro Gln Ser Pro Ala Phe Pro Thr	
398 403 408 413	
gcc tca ccc gca ccc cct cag agc cca ggg ctg caa ccc ctc att atc	1417
Ala Ser Pro Ala Pro Pro Gln Ser Pro Gly Leu Gln Pro Leu Ile Ile	
414 419 424 429	

cac cac gca cag atg gta cag ctg ggg ctg aac aac cac atg tgg aac	1465
His His Ala Gln Met Val Gln Leu Gly Leu Asn Asn His Met Trp Asn	
430 435 440 445	
cag aga ggg tcc cag gcg ccc gag gac aag acg cag gag gca gaa tga	1513
Gln Arg Gly Ser Gln Ala Pro Glu Asp Lys Thr Gln Glu Ala Glu *	
446 451 456 461	
ccgcgtgtcc ttgcctgacc acctggggaa cacccttgga cccaggcatc ggccaggacc	1573
ccatagagca ccccggtctg ccctgtgccc tgtggacagt ggaagatgag gtcattctgcc	1633
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attaagaagg aaatatctcc attgttcatt ggc atg gaa aaa tgt tca gtg gga	174
Met Glu Lys Cys Ser Val Gly	
1 5	
gga tta gag ttg act gaa cag act cct gct tta tta ggg aat atg gcc	222
Gly Leu Glu Leu Thr Glu Gln Thr Pro Ala Leu Leu Gly Asn Met Ala	
8 13 18 23	
atg gca act agt ctc atg gac ata ggg gat tca ttt ggt cat cca gct	270
Met Ala Thr Ser Leu Met Asp Ile Gly Asp Ser Phe Gly His Pro Ala	
24 29 34 39	
tgt cct tta gtc agt aga tct agg aac tca cca gtg gaa gat gat gat	318
Cys Pro Leu Val Ser Arg Ser Arg Asn Ser Pro Val Glu Asp Asp Asp	
40 45 50 55	
gat gat gat gat gtt gtg ttt att gaa tct ata caa cct cct tca att	366
Asp Asp Asp Asp Val Val Phe Ile Glu Ser Ile Gln Pro Pro Ser Ile	
56 61 66 71	

tct gct cca gca ata gct gat caa aga aac ttc ata ttt gca tca tca	414
Ser Ala Pro Ala Ile Ala Asp Gln Arg Asn Phe Ile Phe Ala Ser Ser	
72 77 82 87	
aaa aat gaa aag cct caa gga aat tat tct gta att cct cct tct tca	462
Lys Asn Glu Lys Pro Gln Gly Asn Tyr Ser Val Ile Pro Pro Ser Ser	
88 93 98 103	
aga gat ttg gca tct cag aaa gga aat ata agt gag aca att gtt att	510
Arg Asp Leu Ala Ser Gln Lys Gly Asn Ile Ser Glu Thr Ile Val Ile	
104 109 114 119	
gat gat gaa gag gac ata gaa aca aat gga gga gca gag aaa aag tct	558
Asp Asp Glu Glu Asp Ile Glu Thr Asn Gly Gly Ala Glu Lys Lys Ser	
120 125 130 135	
tcc tgt ttt atc gaa tgg gga ctt cct gga act aaa aac aaa acc aac	606
Ser Cys Phe Ile Glu Trp Gly Leu Pro Gly Thr Lys Asn Lys Thr Asn	
136 141 146 151	
gat ttg gat ttc tcc act tcc agt ctt tca aga agt aag acc aag act	654
Asp Leu Asp Phe Ser Thr Ser Ser Leu Ser Arg Ser Lys Thr Lys Thr	
152 157 162 167	
gga gta aga cct ttt aac cct ggt aga atg aat gtg gca gga gac tta	702
Gly Val Arg Pro Phe Asn Pro Gly Arg Met Asn Val Ala Gly Asp Leu	
168 173 178 183	
ttt cag aat gga gaa ttt gca act cat cat agt cct gat tct tgg atc	750
Phe Gln Asn Gly Glu Phe Ala Thr His His Ser Pro Asp Ser Trp Ile	
184 189 194 199	
tcc cag tca gct tca ttt ccc agt aat cag aaa cag cca ggg gtg gat	798
Ser Gln Ser Ala Ser Phe Pro Ser Asn Gln Lys Gln Pro Gly Val Asp	
200 205 210 215	
tct tta tca cca gtg gcc tta ctt cgt aag cag aat ttc cag cct aca	846
Ser Leu Ser Pro Val Ala Leu Leu Arg Lys Gln Asn Phe Gln Pro Thr	
216 221 226 231	
gcc caa caa caa ctt act aaa cca gct aaa atc act tgt gca aat tgc	894
Ala Gln Gln Gln Leu Thr Lys Pro Ala Lys Ile Thr Cys Ala Asn Cys	
232 237 242 247	
aaa aag cct tta cag aag gga cag aca gct tat caa cga aaa gga tca	942
Lys Lys Pro Leu Gln Lys Gly Gln Thr Ala Tyr Gln Arg Lys Gly Ser	
248 253 258 263	
gct cac ctg ttt tgc tct acc acc tgc ctt tct tcc ttc tct cat aaa	990
Ala His Leu Phe Cys Ser Thr Thr Cys Leu Ser Ser Phe Ser His Lys	
264 269 274 279	
cgt act caa aac aca cga agc ata ata tgt aaa aaa gat gca tct aca	1038
Arg Thr Gln Asn Thr Arg Ser Ile Ile Cys Lys Lys Asp Ala Ser Thr	
280 285 290 295	
aag aag gct aat gtc att ctt cca gta gaa tca agc aaa tcc ttc caa	1086

Lys	Lys	Ala	Asn	Val	Ile	Leu	Pro	Val	Glu	Ser	Ser	Lys	Ser	Phe	Gln	
296					301					306					311	
gaa	ttt	tat	agt	aca	tct	tgt	ttg	tct	ccc	tgt	gaa	aac	aac	tgg	aat	1134
Glu	Phe	Tyr	Ser	Thr	Ser	Cys	Leu	Ser	Pro	Cys	Glu	Asn	Asn	Trp	Asn	
312					317					322					327	
ctt	aaa	aaa	gga	gtt	ttt	aat	aag	tca	aga	tgt	aca	att	tgt	agt	aaa	1182
Leu	Lys	Lys	Gly	Val	Phe	Asn	Lys	Ser	Arg	Cys	Thr	Ile	Cys	Ser	Lys	
328					333					338					343	
tta	gca	gag	gtc	tgg	att	ttt	ata	cct	aag	ttg	ttg	ttt	agg	cta	aca	1230
Leu	Ala	Glu	Val	Trp	Ile	Phe	Ile	Pro	Lys	Leu	Leu	Phe	Arg	Leu	Thr	
344					349					354					359	
gtg	ata	att	tta	act	ttt	aag	tgc	tat	tat	gta	ctc	ttt	cat	cta	cat	1278
Val	Ile	Ile	Leu	Thr	Phe	Lys	Cys	Tyr	Tyr	Val	Leu	Phe	His	Leu	His	
360					365					370					375	
aat	gca	cgt	gtt	ctg	gat	gta	taa	catgaagctg	aaaggaagaa	taaggatatg						1332
Asn	Ala	Arg	Val	Leu	Asp	Val	*									
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attaagaagg	aaatatctcc	attgttcatt	ggc	atg	gaa	aaa	tgt	tca	gtg	gga						174
				Met	Glu	Lys	Cys	Ser	Val	Gly						
				1				5								
gga	tta	gag	ttg	act	gaa	cag	act	cct	gct	tta	tta	ggg	aat	atg	gcc	222
Gly	Leu	Glu	Leu	Thr	Glu	Gln	Thr	Pro	Ala	Leu	Leu	Gly	Asn	Met	Ala	
8					13					18					23	
atg	gca	act	agt	ctc	atg	gac	ata	ggg	gat	tca	ttt	ggt	cat	cca	gct	270
Met	Ala	Thr	Ser	Leu	Met	Asp	Ile	Gly	Asp	Ser	Phe	Gly	His	Pro	Ala	
24					29					34					39	
tgt	cct	tta	gtc	agt	aga	tct	agg	aac	tca	cca	gtg	gaa	gat	gat	gat	318
Cys	Pro	Leu	Val	Ser	Arg	Ser	Arg	Asn	Ser	Pro	Val	Glu	Asp	Asp	Asp	
40					45					50					55	

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Asp Asp Asp Asp Val Val Phe Ile Glu Ser Ile Gln Pro Pro Ser Ile	
56 61 66 71	
tct gct cca gca ata gct gat caa aga aac ttc ata ttt gca tca tca	414
Ser Ala Pro Ala Ile Ala Asp Gln Arg Asn Phe Ile Phe Ala Ser Ser	
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aaa aat gaa aag cct caa gga aat tat tct gta att cct cct tct tca	462
Lys Asn Glu Lys Pro Gln Gly Asn Tyr Ser Val Ile Pro Pro Ser Ser	
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Arg Asp Leu Ala Ser Gln Lys Gly Asn Ile Ser Glu Thr Ile Val Ile	
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Asp Asp Glu Glu Asp Ile Glu Thr Asn Gly Gly Ala Glu Lys Lys Ser	
120 125 130 135	
tcc tgt ttt atc gaa tgg gga ctt cct gga act aaa aac aaa acc aac	606
Ser Cys Phe Ile Glu Trp Gly Leu Pro Gly Thr Lys Asn Lys Thr Asn	
136 141 146 151	
gat ttg gat ttc tcc act tcc agt ctt tca aga agt aag acc aag act	654
Asp Leu Asp Phe Ser Thr Ser Ser Leu Ser Arg Ser Lys Thr Lys Thr	
152 157 162 167	
gga gta aga cct ttt aac cct ggt aga atg aat gtg gca gga gac tta	702
Gly Val Arg Pro Phe Asn Pro Gly Arg Met Asn Val Ala Gly Asp Leu	
168 173 178 183	
ttt cag aat gga gaa ttt gca act cat cat agt cct gat gat gca tct	750
Phe Gln Asn Gly Glu Phe Ala Thr His His Ser Pro Asp Asp Ala Ser	
184 189 194 199	
aca aag aag gct aat gtc att ctt cca gta gaa tca agc aaa tcc ttc	798
Thr Lys Lys Ala Asn Val Ile Leu Pro Val Glu Ser Ser Lys Ser Phe	
200 205 210 215	
caa gaa ttt tat agg aca tct tgt ttg tct ccc tgt gaa aac aac tgg	846
Gln Glu Phe Tyr Arg Thr Ser Cys Leu Ser Pro Cys Glu Asn Asn Trp	
216 221 226 231	
aat ctt aaa aaa gga gtt ttt aat aag tca aga tgt aca att tgt agt	894
Asn Leu Lys Lys Gly Val Phe Asn Lys Ser Arg Cys Thr Ile Cys Ser	
232 237 242 247	
aaa tta gca gag gtc tgg att ttt ata cct aag ttg ttg ttt agg cta	942
Lys Leu Ala Glu Val Trp Ile Phe Ile Pro Lys Leu Leu Phe Arg Leu	
248 253 258 263	
aca gtg ata att tta act ttt aag tgc tat tat gga ctc ttt cat cta	990
Thr Val Ile Ile Leu Thr Phe Lys Cys Tyr Tyr Gly Leu Phe His Leu	
264 269 274 279	

cat aat gca cgt gtt ctg gat gta taa catga agctgaaagg aagaataagg 1042
His Asn Ala Arg Val Leu Asp Val *
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atatgttaga actatcttat gggatatttt ataaataaaa ttccctttgc atagcatgga 1102

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Tyr His Pro Phe Leu Pro His Arg Ala Pro Asp Phe Ala Met Ser Ala
17 22 27 32

gtg ctg ggt cac cag ccg ccg ttc ttc ccc gcg ctg acg ctg cct ccc 144
Val Leu Gly His Gln Pro Pro Phe Phe Pro Ala Leu Thr Leu Pro Pro
33 38 43 48

aac ggc gcg gcg gcg ctc tcg ctg ccg ggc gcc ctg gcc aag ccg atc 192
Asn Gly Ala Ala Ala Leu Ser Leu Pro Gly Ala Leu Ala Lys Pro Ile
49 54 59 64

atg gat caa ttg gtg ggg gcg gcc gag acc ggc atc ccg ttc tcc tcc 240
Met Asp Gln Leu Val Gly Ala Ala Glu Thr Gly Ile Pro Phe Ser Ser
65 70 75 80

ctg ggg ccc cag gcg cat ctg agg cct ttg aag acc atg gag ccc gaa 288
Leu Gly Pro Gln Ala His Leu Arg Pro Leu Lys Thr Met Glu Pro Glu
81 86 91 96

gaa gag gtg gag gac gac ccc aag gtg cac ctg gag gct aaa gaa ctt 336
Glu Glu Val Glu Asp Asp Pro Lys Val His Leu Glu Ala Lys Glu Leu
97 102 107 112

tgg gat cag ttt cac aag cgg ggc acc gag atg gtc att acc aag tcg 384
Trp Asp Gln Phe His Lys Arg Gly Thr Glu Met Val Ile Thr Lys Ser
113 118 123 128

gga agg cga atg ttt cct cca ttt aaa gtg aga tgt tct ggg ctg gat 432
Gly Arg Arg Met Phe Pro Pro Phe Lys Val Arg Cys Ser Gly Leu Asp
129 134 139 144

aaa aaa gcc aaa tac att tta ttg atg gac att ata gct gct gat gac	480
Lys Lys Ala Lys Tyr Ile Leu Leu Met Asp Ile Ile Ala Ala Asp Asp	
145 150 155 160	
tgt cgt tat aaa ttt cac aat tct cgg tgg atg gtg gct ggt aag gcc	528
Cys Arg Tyr Lys Phe His Asn Ser Arg Trp Met Val Ala Gly Lys Ala	
161 166 171 176	
gac ccc gaa atg cca aag agg atg tac att cac ccg gac agc ccc gct	576
Asp Pro Glu Met Pro Lys Arg Met Tyr Ile His Pro Asp Ser Pro Ala	
177 182 187 192	
act ggg gaa cag tgg atg tcc aaa gtc gtc act ttc cac aaa ctg aaa	624
Thr Gly Glu Gln Trp Met Ser Lys Val Val Thr Phe His Lys Leu Lys	
193 198 203 208	
ctc acc aac aac att tca gac aaa cat gga ttt act ata ttg aac tcc	672
Leu Thr Asn Asn Ile Ser Asp Lys His Gly Phe Thr Ile Leu Asn Ser	
209 214 219 224	
atg cac aaa tac cag ccc cgg ttc cac att gta aga gcc aat gac atc	720
Met His Lys Tyr Gln Pro Arg Phe His Ile Val Arg Ala Asn Asp Ile	
225 230 235 240	
ttg aaa ctc cct tat agt aca ttt cgg aca tac ttg ttc ccc gaa act	768
Leu Lys Leu Pro Tyr Ser Thr Phe Arg Thr Tyr Leu Phe Pro Glu Thr	
241 246 251 256	
gaa ttc atc gct gtg act gca tac cag aat gat aag ata acc cag tta	816
Glu Phe Ile Ala Val Thr Ala Tyr Gln Asn Asp Lys Ile Thr Gln Leu	
257 262 267 272	
aaa ata gac aac aac cct ttt gca aaa ggt ttc cgg gac act gga aat	864
Lys Ile Asp Asn Asn Pro Phe Ala Lys Gly Phe Arg Asp Thr Gly Asn	
273 278 283 288	
ggc cga aga gaa aaa aga aaa cag ctc acc ctg cag tcc atg agg gtg	912
Gly Arg Arg Glu Lys Arg Lys Gln Leu Thr Leu Gln Ser Met Arg Val	
289 294 299 304	
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Phe Asp Glu Arg His Lys Lys Glu Asn Gly Thr Ser Asp Glu Ser Ser	
305 310 315 320	
agt gaa caa gca gct ttc aac tgc ttc gcc cag gct tct tct cca gcc	1008
Ser Glu Gln Ala Ala Phe Asn Cys Phe Ala Gln Ala Ser Ser Pro Ala	
321 326 331 336	
gcc tcc act gta ggg aca tcg aac ctc aaa gat tta tgt ccc agc gag	1056
Ala Ser Thr Val Gly Thr Ser Asn Leu Lys Asp Leu Cys Pro Ser Glu	
337 342 347 352	
ggt gag agc gac gcc gag gcc gag agc aaa gag gag cat ggc ccc gag	1104
Gly Glu Ser Asp Ala Glu Ala Glu Ser Lys Glu Glu His Gly Pro Glu	
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gcc tgc gac gcg gcc aag atc tcc acc acc acg tcg gag gag ccc tgc	1152

Ala Cys Asp Ala Ala Lys Ile Ser Thr Thr Thr Ser Glu Glu Pro Cys	
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cgt gac aag ggc agc ccc gcg gtc aag gct cac ctt ttc gct gct gag	1200
Arg Asp Lys Gly Ser Pro Ala Val Lys Ala His Leu Phe Ala Ala Glu	
385 390 395 400	
cgg ccc cgg gac agc ggg cgg ctg gac aaa gcg tcg ccc gac tca cgc	1248
Arg Pro Arg Asp Ser Gly Arg Leu Asp Lys Ala Ser Pro Asp Ser Arg	
401 406 411 416	
cat agc ccc gcc acc atc tcg tcc agc act cgc ggc ctg ggc gcg gag	1296
His Ser Pro Ala Thr Ile Ser Ser Ser Thr Arg Gly Leu Gly Ala Glu	
417 422 427 432	
gag cgc agg agc ccg gtt cgc gag ggc aca gcg ccg gcc aag gtg gaa	1344
Glu Arg Arg Ser Pro Val Arg Glu Gly Thr Ala Pro Ala Lys Val Glu	
433 438 443 448	
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Glu Ala Arg Ala Leu Pro Gly Lys Glu Ala Phe Ala Pro Leu Thr Val	
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Gln Thr Asp Ala Ala Ala His Leu Ala Gln Gly Pro Leu Pro Gly	
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Leu Gly Phe Ala Pro Gly Leu Ala Gly Gln Gln Phe Phe Asn Gly His	
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Pro Leu Phe Leu His Pro Ser Gln Phe Ala Met Gly Gly Ala Phe Ser	
497 502 507 512	
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Ser Met Ala Ala Ala Gly Met Gly Pro Leu Leu Ala Thr Val Ser Gly	
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Ala Ser Thr Gly Val Ser Gly Leu Asp Ser Thr Ala Met Ala Ser Ala	
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His Leu Gln Gln His Val Leu Ala Ser Gln Gly Leu Ala Met Ser Pro	
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Phe Gly Ser Leu Phe Pro Tyr Pro Tyr Thr Tyr Met Ala Ala Ala Ala	
577 582 587 592	
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Ala Ala Ser Leu Arg Gln Pro Gln Leu Arg Cys Thr Ala Pro Leu Leu	

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aat ctg aac acc atg cgc ccg cgg ttg cgc tac agc ccc tac tcc atc				1872
Asn Leu Asn Thr Met Arg Pro Arg Leu Arg Tyr Ser Pro Tyr Ser Ile				
609	614	619	624	
ccg gtg ccg gtc ccg gac ggc agc agt ctg ctc acc acc gcc ctg ccc				1920
Pro Val Pro Val Pro Asp Gly Ser Ser Leu Leu Thr Thr Ala Leu Pro				
625	630	635	640	
tcc atg gcg gcg gcc gcg ggg ccc ctg gac ggc aaa gtc gcc gcc ctg				1968
Ser Met Ala Ala Ala Ala Gly Pro Leu Asp Gly Lys Val Ala Ala Leu				
641	646	651	656	
gcc gcc agc ccg gcc tcg gtg gca gtg gac tcg ggc tct gaa ctc acc				2016
Ala Ala Ser Pro Ala Ser Val Ala Val Asp Ser Gly Ser Glu Leu Thr				
657	662	667	672	
agc cgc tcc tcc acg ctc tcc tcc agc tcc atg tcc ttg tcg ccc aaa				2064
Ser Arg Ser Ser Thr Leu Ser Ser Ser Ser Met Ser Leu Ser Pro Lys				
673	678	683	688	
ctc tgc gcg gag aaa gag gcg gcc acc agc gaa ctg cag agc atc cag				2112
Leu Cys Ala Glu Lys Glu Ala Ala Thr Ser Glu Leu Gln Ser Ile Gln				
689	694	699	704	
cgg ttg gtt agc ggc ttg gaa gcc aag ccg gac agg tcc cgc agc gcg				2160
Arg Leu Val Ser Gly Leu Glu Ala Lys Pro Asp Arg Ser Arg Ser Ala				
705	710	715	720	
tcc ccg tag acccgctc ccagacacgt cttttcattc cagtccagtt caggctgccg				2216
Ser Pro *				
721				
tgcacttttgt cggatataaa ataaaccacg ggcccgccat ggcgtagcc cttccttttg				2276
cagttgcgctc tgggaagggg ccccggaactc cctcgagaga atgtgctaga gacagccctt				2336
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gtcaacgtca gctctgttgc gaggcggggt ctcccaacaa tagcccacac catttccagg    180
cttttctggg cgagggggcag ggcgcccggc ccccaaagcg agaagacaga cagccccggt    240
tctccgcagc cccaggtttg ctctcaagg acggaggggc ctctcagctc eggccgcctc     300
ctttccgccc cctgcaggcc ggccggagga aagctcaggg cccaggtcgg cccagggagc     360
acggaaccaa agagcgctag cgccggttcg gccgccttcc cagaaagccc gggccgaacg     420
gccccgccgc agagactcag cgcggatcgc tgctccctct cgcc atg gcg cag gtg      476
                               Met Ala Gln Val
                               1

ctg atc gtg ggc gcc ggg atg aca gga agc ttg tgc gct gcg ctg ctg      524
Leu Ile Val Gly Ala Gly Met Thr Gly Ser Leu Cys Ala Ala Leu Leu
   5                10                15                20

agg agg cag acg tcc ggt ccc ttg tac ctt gct gtg tgg gac aag gct      572
Arg Arg Gln Thr Ser Gly Pro Leu Tyr Leu Ala Val Trp Asp Lys Ala
  21                26                31                36

gag gac tca ggg gga aga atg act aca gcc tgc agt cct cat aat cct      620
Glu Asp Ser Gly Gly Arg Met Thr Thr Ala Cys Ser Pro His Asn Pro
  37                42                47                52

cag tgc aca gct gac ttg ggt gct cag tac atc acc tgc act cct cat      668
Gln Cys Thr Ala Asp Leu Gly Ala Gln Tyr Ile Thr Cys Thr Pro His
  53                58                63                68

tat gcc aaa aaa cac caa cgt ttt tat gat gaa ctg tta gcc tat ggc      716
Tyr Ala Lys Lys His Gln Arg Phe Tyr Asp Glu Leu Leu Ala Tyr Gly
  69                74                79                84

gtt ttg agg cct cta agc tcg cct att gaa gga atg gtg atg aaa gaa      764
Val Leu Arg Pro Leu Ser Ser Pro Ile Glu Gly Met Val Met Lys Glu
  85                90                95                100

gga gac tgt aac ttt gtg gca cct caa gga att tct tca att att aag      812

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His	Tyr	Leu	Lys	Glu	Ser	Gly	Ala	Glu	Val	Tyr	Phe	Arg	His	Arg	Val	
117					122					127					132	
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Thr	Gln	Ile	Asn	Leu	Arg	Asp	Asp	Lys	Trp	Glu	Val	Ser	Lys	Gln	Thr	
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Gly	Ser	Pro	Glu	Gln	Phe	Asp	Leu	Ile	Val	Leu	Thr	Met	Pro	Val	Pro	
149					154					159					164	
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Glu	Ile	Leu	Gln	Leu	Gln	Gly	Asp	Ile	Thr	Thr	Leu	Ile	Ser	Glu	Cys	
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caa	agg	cag	caa	ctg	gag	gct	gtg	agc	tac	tcc	tct	cga	tat	gct	ctg	1052
Gln	Arg	Gln	Gln	Leu	Glu	Ala	Val	Ser	Tyr	Ser	Ser	Arg	Tyr	Ala	Leu	
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Gly	Leu	Phe	Tyr	Glu	Ala	Gly	Thr	Lys	Ile	Asp	Val	Pro	Trp	Ala	Gly	
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Gln	Tyr	Ile	Thr	Ser	Asn	Pro	Cys	Ile	Arg	Phe	Val	Ser	Ile	Asp	Asn	
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Lys	Lys	Arg	Asn	Ile	Glu	Ser	Ser	Glu	Ile	Gly	Pro	Ser	Leu	Val	Ile	
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cac	acc	act	gtc	cca	ttt	gga	gtt	aca	tac	ttg	gaa	cac	agc	att	gag	1244
His	Thr	Thr	Val	Pro	Phe	Gly	Val	Thr	Tyr	Leu	Glu	His	Ser	Ile	Glu	
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gat	gtg	caa	gag	tta	gtc	ttc	cag	cag	ctg	gaa	aac	att	ttg	ccg	ggg	1292
Asp	Val	Gln	Glu	Leu	Val	Phe	Gln	Gln	Leu	Glu	Asn	Ile	Leu	Pro	Gly	
261					266					271					276	
ttg	cct	cag	cca	att	gct	acc	aaa	tgc	caa	aaa	tgg	aga	cat	tca	cag	1340
Leu	Pro	Gln	Pro	Ile	Ala	Thr	Lys	Cys	Gln	Lys	Trp	Arg	His	Ser	Gln	
277					282					287					292	
gtt	aca	aat	gct	gct	gcc	aac	tgt	cct	ggc	caa	atg	act	ctg	cat	cac	1388
Val	Thr	Asn	Ala	Ala	Ala	Asn	Cys	Pro	Gly	Gln	Met	Thr	Leu	His	His	
293					298					303					308	
aaa	cct	ttc	ctt	gca	tgt	gga	ggg	gat	gga	ttt	act	cag	tcc	aac	ttt	1436
Lys	Pro	Phe	Leu	Ala	Cys	Gly	Gly	Asp	Gly	Phe	Thr	Gln	Ser	Asn	Phe	
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Tyr Ile *				
341				
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Met Leu Ser Val Ala Ala	
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Arg Ser Gly Pro Phe Ala Pro Val Leu Ser Ala Thr Pro Glu Gln Pro	
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Val Leu Asp Leu Lys Arg Pro Phe Leu Ser Arg Glu Ser Leu Ser Gly	
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Gln Ala Val Arg Arg Pro Leu Val Ala Ser Val Gly Leu Asn Val Pro	
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Ala Ser Val Cys Tyr Ser His Thr Asp Ile Lys Val Pro Asp Phe Ser	
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Glu Tyr Arg Arg Leu Glu Val Leu Asp Ser Thr Lys Ser Ser Arg Glu	
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Ser Ser Glu Ala Arg Lys Gly Phe Ser Tyr Leu Val Thr Gly Val Thr	
87 92 97 102	
act gtg ggt gtc gca tat gct gcc aag aat gcc gtc acc cag ttc gtt	448
Thr Val Gly Val Ala Tyr Ala Ala Lys Asn Ala Val Thr Gln Phe Val	
103 108 113 118	
tcc agc atg agt gct tct gct gat gtg ttg gcc ctg gcg aaa atc gaa	496
Ser Ser Met Ser Ala Ser Ala Asp Val Leu Ala Leu Ala Lys Ile Glu	
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Ile Lys Leu Ser Asp Ile Pro Glu Gly Lys Asn Met Ala Phe Lys Trp	
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Arg Gly Lys Pro Leu Phe Val Arg His Arg Thr Gln Lys Glu Ile Glu	
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Gln Glu Ala Ala Val Glu Leu Ser Gln Leu Arg Asp Pro Gln His Asp	
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Leu Asp Arg Val Lys Lys Pro Glu Trp Val Ile Leu Ile Gly Val Cys	
183 188 193 198	
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Thr His Leu Gly Cys Val Pro Ile Ala Asn Ala Gly Asp Phe Gly Gly	
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Tyr Tyr Cys Pro Cys His Gly Ser His Tyr Asp Ala Ser Gly Arg Ile	
215 220 225 230	
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Arg Leu Gly Pro Ala Pro Leu Asn Leu Glu Val Pro Thr Tyr Glu Phe	
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Thr Ser Asp Asp Met Val Ile Val Gly *	
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 Trp Val Gly Arg Gln Arg Asp Ser Gly Val Leu Ser Arg Pro Cys Pro
 2 7 12 17

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 Ser Thr Ala Ala Leu Pro Glu Ala Leu Leu Cys Ser Ser Ala Pro Ala
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 gcc cga cgc ccc agc ttg tgc ggg gcc acg gga ggg tca tgc gcg gat 199
 Ala Arg Arg Pro Ser Leu Cys Gly Ala Thr Gly Gly Ser Cys Ala Asp
 34 39 44 49

 ttc gac tcg ggt gtg gat ttc gtc cgt aga gag agc agc ggt ctg tgg 247
 Phe Asp Ser Gly Val Asp Phe Val Arg Arg Glu Ser Ser Gly Leu Trp
 50 55 60 65

 ggc cca cag cct cca ctt tct cct gtt aaa aat tat act gag atg ttt 295
 Gly Pro Gln Pro Pro Leu Ser Pro Val Lys Asn Tyr Thr Glu Met Phe
 66 71 76 81

 cag gac cca gtg gct ttt aag gat gtg gct gtg aac ttc acc cag gag 343
 Gln Asp Pro Val Ala Phe Lys Asp Val Ala Val Asn Phe Thr Gln Glu
 82 87 92 97

 gag tgg gct ttg ctg gat att tcc cag aag aat ctc tac agg gaa gtg 391
 Glu Trp Ala Leu Leu Asp Ile Ser Gln Lys Asn Leu Tyr Arg Glu Val
 98 103 108 113

 atg ctg gaa act ttc tgg aac ctg acc tct ata gga aaa aag tgg aaa 439
 Met Leu Glu Thr Phe Trp Asn Leu Thr Ser Ile Gly Lys Lys Trp Lys
 114 119 124 129

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 Asp Gln Asn Ile Glu Tyr Glu Tyr Gln Asn Pro Arg Arg Asn Phe Arg
 130 135 140 145

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 Ser Val Thr Glu Glu Lys Val Asn Glu Ile Lys Glu Asp Ser His Cys
 146 151 156 161

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Lys Lys Ala Ser Pro Glu Val Lys Ser Cys Asp Ser Phe Val Cys Glu	
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Val Gly Leu Gly Asn Ser Ser Ser Asn Met Asn Ile Arg Gly Asp Thr	
194 199 204 209	
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Gly His Lys Ala Cys Glu Cys Gln Glu Tyr Gly Pro Lys Pro Trp Lys	
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Gly Lys Asn Ile Ile Tyr His Ser Ser Ile Gln Arg His Met Val Val	
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His Cys Leu Ser Leu Tyr Leu Ile His Glu Arg Thr His Thr Gly Glu	
290 295 300 305	
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Lys Pro Tyr Glu Cys Lys Gln Cys Gly Lys Ser Phe Ser Tyr Ser Ala	
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acc cat cga ata cat gaa aga act cac att gga gaa aag cct tat gaa	1063
Thr His Arg Ile His Glu Arg Thr His Ile Gly Glu Lys Pro Tyr Glu	
322 327 332 337	
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Cys Gln Glu Cys Gly Lys Ala Phe His Ser Pro Arg Ser Cys His Arg	
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Gly Lys Ala Phe Met Cys Pro Arg Tyr Val Arg Arg His Glu Arg Thr	
370 375 380 385	
cac tct agg aaa aaa ctt tat gaa tgt aag cag tgt ggg aaa gca tta	1255

His	Ser	Arg	Lys	Lys	Leu	Tyr	Glu	Cys	Lys	Gln	Cys	Gly	Lys	Ala	Leu
386					391					396					401

tcc	tct	ctt	aca	agt	ttt	caa	aca	cac	ata	aga	atg	cac	tct	gga	gaa	1303
Ser	Ser	Leu	Thr	Ser	Phe	Gln	Thr	His	Ile	Arg	Met	His	Ser	Gly	Glu	
402					407					412					417	

aga	cct	tat	gaa	tgt	aag	aca	tgt	ggg	aaa	ggc	ttt	tat	tct	gcc	aag	1351
Arg	Pro	Tyr	Glu	Cys	Lys	Thr	Cys	Gly	Lys	Gly	Phe	Tyr	Ser	Ala	Lys	
418					423					428					433	

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Cys	Lys	Gln	Cys	Gly	Lys	Ala	Phe	Thr	Arg	Ser	Gly	Ser	Phe	Arg	Tyr	
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Gly	Lys	Ala	Phe	Arg	Ser	Ala	Pro	Asn	Leu	Gln	Ser	His	Gly	Arg	Thr	
482					487					492					497	

cac	act	gga	gag	aaa	ccg	tat	caa	tgt	aag	gaa	tgt	ggg	aaa	gct	ttc	1591
His	Thr	Gly	Glu	Lys	Pro	Tyr	Gln	Cys	Lys	Glu	Cys	Gly	Lys	Ala	Phe	
498					503					508					513	

aga	tct	gcc	tca	caa	ctt	cga	atc	cat	cgt	agg	att	cac	act	gga	gag	1639
Arg	Ser	Ala	Ser	Gln	Leu	Arg	Ile	His	Arg	Arg	Ile	His	Thr	Gly	Glu	
514					519					524					529	

aaa	ccc	tat	gaa	tgt	aag	aaa	tgt	ggg	aaa	gcc	ttc	aga	tat	gtc	cag	1687
Lys	Pro	Tyr	Glu	Cys	Lys	Lys	Cys	Gly	Lys	Ala	Phe	Arg	Tyr	Val	Gln	
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Asn	Phe	Arg	Phe	His	Glu	Arg	Thr	His	Asn	Gly	Glu	Lys	Pro	Tyr	Glu	
546					551					556					561	

tgt	aaa	gaa	tgc	aga	aaa	gca	ttc	agc	ttg	cct	act	tcc	ttt	cat	aga	1783
Cys	Lys	Glu	Cys	Arg	Lys	Ala	Phe	Ser	Leu	Pro	Thr	Ser	Phe	His	Arg	
562					567					572					577	

cat	gaa	aag	aca	ttg	gaa	gga	aac	cct	atg	aag	gca	agc	aat	gtg	gca	1831
His	Glu	Lys	Thr	Leu	Glu	Gly	Asn	Pro	Met	Lys	Ala	Ser	Asn	Val	Ala	
578					583					588					593	

aag	ctt	tca	ctt	ctt	cca	gtt	ctt	ttc	aat	atc	atg	aaa	gaa	ttc	aca	1879
Lys	Leu	Ser	Leu	Leu	Pro	Val	Leu	Phe	Asn	Ile	Met	Lys	Glu	Phe	Thr	
594					599					604					609	

ctg	ggg	aga	aac	cct	atc	agt	gta	agc	aat	gtg	cga	aag	cct	tta	ttt	1927
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cct atg agt gta tgc cat gtg gga aag cct tca ttt ttc tag ttgcttt		2024		
Pro Met Ser Val Cys His Val Gly Lys Pro Ser Phe Phe *				
642	647	652		
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gccttcagat cagcctcaca ccttcaaattg tatggaagga ctcacactgg agagaaaccc		2144		
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gcccacagat ggtttggccc tgcagtgacc agagcagccc aagccgccac catggtgaaa	300	
ttgctagtgg ccaaaatcct gtgcatggtg ggcgtgttct tcttc	354	
	atg ctg ctc	
	Met Leu Leu	
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Gly Ser Leu Leu Pro Val Lys Ile Ile Glu Thr Asp Phe Glu Lys Ala		
4 9 14 19		
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His Arg Ser Lys Lys Ile Leu Ser Leu Cys Asn Thr Phe Gly Gly Gly		
20 25 30 35		

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Val Phe Leu Ala Thr Cys Phe Asn Ala Leu Leu Pro Ala Val Arg Glu	
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Lys Leu Gln Lys Val Leu Ser Leu Gly His Ile Ser Thr Asp Tyr Pro	
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Leu Ala Glu Thr Ile Leu Leu Leu Gly Phe Phe Met Thr Val Phe Leu	
68 73 78 83	
gag cag ctg atc ctg acc ttc cgc aag gag aag ccg tcc ttc atc gac	642
Glu Gln Leu Ile Leu Thr Phe Arg Lys Glu Lys Pro Ser Phe Ile Asp	
84 89 94 99	
ctg gag acc ttc aac gcc gga tgc gac gtg ggc agc gac tgc gag tat	690
Leu Glu Thr Phe Asn Ala Gly Ser Asp Val Gly Ser Asp Ser Glu Tyr	
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Pro His Gly His Gly Pro Ser Leu Ser Val Gln Gly Leu Ser Arg Ala	
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Ser Pro Val Arg Leu Leu Ser Leu Ala Phe Ala Leu Ser Ala His Ser	
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Val Phe Glu Gly Leu Ala Leu Gly Leu Gln Glu Glu Gly Glu Lys Val	
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Val Ser Leu Phe Val Gly Val Ala Val His Glu Thr Leu Val Ala Val	
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Ala Leu Gly Ile Ser Met Ala Arg Ser Ala Met Pro Leu Arg Asp Ala	
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gcc aag ctg gcg gtc acc gta agc gcc atg atc ccc ctg ggc atc ggc	1026
Ala Lys Leu Ala Val Thr Val Ser Ala Met Ile Pro Leu Gly Ile Gly	
212 217 222 227	
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Leu Gly Leu Gly Ile Glu Ser Ala Gln Gly Val Pro Gly Ser Val Ala	
228 233 238 243	
tcc gtg ctg ctg cag ggc ctg gcg ggc ggc acc ttc ctc ttc atc acc	1122
Ser Val Leu Leu Gln Gly Leu Ala Gly Gly Thr Phe Leu Phe Ile Thr	
244 249 254 259	

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Phe Leu Glu Ile Leu Ala Lys Glu Leu Glu Glu Lys Ser Asp Arg Leu
260 265 270 275

ctc aag gtc ctc ttc ctg gtg ctg ggc tac acc gtc ctg gcc ggg atg 1218
Leu Lys Val Leu Phe Leu Val Leu Gly Tyr Thr Val Leu Ala Gly Met
276 281 286 291

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Val Phe Leu Lys Trp *
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ctgtggccct ggccaccac ctgtgcacaa gggcctccc gggaccaggc tgtgccccg 1392

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Gln Phe Pro His Leu Glu Ser Arg Asn Asp Asn Arg Thr Cys His Trp
13 18 23 28

tgt gac aca gag att cat ata gtg aac gcc acc atc agt gac act gat 145
Cys Asp Thr Glu Ile His Ile Val Asn Ala Thr Ile Ser Asp Thr Asp
29 34 39 44

tgc atg aaa tct gcc atg gtg gtg gcc ctt agt aag aga agt cag gag 193
Cys Met Lys Ser Ala Met Val Val Ala Leu Ser Lys Arg Ser Gln Glu
45 50 55 60

gcg gag gct gct ttt ctg agt gtt tac aag caa tta att gaa gca cca 241
Ala Glu Ala Ala Phe Leu Ser Val Tyr Lys Gln Leu Ile Glu Ala Pro
61 66 71 76

gcc ctg tgg gaa ctc aag ctc aag tcc agg cct gcc ctt gga gac tct 289
Ala Leu Trp Glu Leu Lys Leu Lys Ser Arg Pro Ala Leu Gly Asp Ser
77 82 87 92

cgg gtt cag caa gga caa cat gac cca aag aca gac aac cag aat aca	337
Arg Val Gln Gln Gly Gln His Asp Pro Lys Thr Asp Asn Gln Asn Thr	
93 98 103 108	
caa cag aaa gca ggc ttc aag gaa gga tgg ctg gca gag gcc tca gag	385
Gln Gln Lys Ala Gly Phe Lys Glu Gly Trp Leu Ala Glu Ala Ser Glu	
109 114 119 124	
agg gag gcc ttt gga cct ggt ttt aaa gac ccc gtg cct gtg ttt gag	433
Arg Glu Ala Phe Gly Pro Gly Phe Lys Asp Pro Val Pro Val Phe Glu	
125 130 135 140	
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Ala Ala Arg Ser Leu Asp Asp Arg Leu Gln Pro Pro Ser Phe Asp Pro	
141 146 151 156	
agt ggg cag ccc cgg cga gac ctc cac act tcg tgg aag agg aac ccc	529
Ser Gly Gln Pro Arg Arg Asp Leu His Thr Ser Trp Lys Arg Asn Pro	
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Glu Leu Leu Ser Pro Lys Ala Leu Lys Ala Thr Gln Ala Glu Leu Leu	
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Glu Leu Arg Arg Lys Tyr Asp Glu Glu Ala Ala Ser Lys Ala Asp Glu	
189 194 199 204	
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Val Gly Leu Ile Met Thr Asn Leu Glu Lys Ala Asn Gln Arg Ala Glu	
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gct gcc cag cgg gag gtg gaa agt ctc cgg gaa cag ctg gcc tct gtc	721
Ala Ala Gln Arg Glu Val Glu Ser Leu Arg Glu Gln Leu Ala Ser Val	
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Asn Ser Ser Ile Arg Leu Ala Cys Cys Ser Pro Gln Gly Pro Ser Gly	
237 242 247 252	
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Asp Lys Val Asn Phe Thr Leu Cys Ser Gly Pro Arg Leu Glu Ala Ala	
253 258 263 268	
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Leu Ala Ser Lys Asp Arg Glu Ile Leu Arg Leu Leu Lys Asp Val Gln	
269 274 279 284	
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His Leu Gln Ser Ser Leu Gln Glu Leu Glu Glu Ala Ser Ala Asn Gln	
285 290 295 300	
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Ile Ala Asp Leu Glu Arg Gln Leu Thr Ala Lys Ser Glu Ala Ile Glu	
301 306 311 316	
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Lys	Leu	Glu	Glu	Lys	Leu	Gln	Ala	Gln	Ser	Asp	Tyr	Glu	Glu	Ile	Lys		
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Thr	Glu	Leu	Ser	Ile	Leu	Lys	Ala	Met	Lys	Leu	Ala	Ser	Ser	Thr	Cys		
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Ser	Leu	Pro	Gln	Gly	Met	Ala	Lys	Pro	Glu	Asp	Ser	Leu	Leu	Ile	Ala		
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Lys	Glu	Ala	Phe	Phe	Pro	Thr	Gln	Lys	Phe	Leu	Leu	Glu	Lys	Pro	Ser		
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Leu	Leu	Ala	Ser	Pro	Glu	Glu	Asp	Pro	Ser	Glu	Asp	Asp	Ser	Ile	Lys		
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Asp	Ser	Leu	Gly	Thr	Glu	Gln	Ser	Tyr	Pro	Ser	Pro	Gln	Gln	Leu	Pro		
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cct	cca	cca	ggg	cca	gaa	gac	ccc	ctg	tct	ccc	agc	ccc	ggg	cag	ccc	1297	
Pro	Pro	Pro	Gly	Pro	Glu	Asp	Pro	Leu	Ser	Pro	Ser	Pro	Gly	Gln	Pro		
413					418					423					428		
ctg	ctg	ggc	ccc	agc	ttg	ggg	cct	gac	ggc	act	cgg	act	ttc	tcg	ctg	1345	
Leu	Leu	Gly	Pro	Ser	Leu	Gly	Pro	Asp	Gly	Thr	Arg	Thr	Phe	Ser	Leu		
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tcc	ccc	ttc	ccc	agc	ctg	gca	tca	ggg	gag	aga	ctg	atg	atg	ccc	cca	1393	
Ser	Pro	Phe	Pro	Ser	Leu	Ala	Ser	Gly	Glu	Arg	Leu	Met	Met	Pro	Pro		
445					450					455					460		
gcc	gcc	ttc	aag	gga	gag	gcg	ggc	ggc	ctg	ctg	gtg	ttc	ccc	cca	gcc	1441	
Ala	Ala	Phe	Lys	Gly	Glu	Ala	Gly	Gly	Leu	Leu	Val	Phe	Pro	Pro	Ala		
461					466					471					476		
ttc	tat	ggc	gcc	aag	ccc	ccc	aca	gcc	cct	gcc	acc	ccg	gcc	cct	ggc	1489	
Phe	Tyr	Gly	Ala	Lys	Pro	Pro	Thr	Ala	Pro	Ala	Thr	Pro	Ala	Pro	Gly		
477					482					487					492		
cct	gag	cca	ctg	ggc	ggt	cct	gag	ccc	gcg	gat	ggt	ggt	ggg	ggc	gga	1537	
Pro	Glu	Pro	Leu	Gly	Gly	Pro	Glu	Pro	Ala	Asp	Gly	Gly	Gly	Gly	Gly		
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Ala	Ala	Gly	Pro	Gly	Ala	Glu	Glu	Glu	Gln	Leu	Asp	Thr	Ala	Glu	Ile		
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Ala	Phe	Gln	Val	Lys	Glu	Gln	Leu	Leu	Lys	His	Asn	Ile	Gly	Gln	Arg		
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Val	Phe	Gly	His	Tyr	Val	Leu	Gly	Leu	Ser	Gln	Gly	Ser	Val	Ser	Glu		

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Arg Ile Arg Thr Pro Glu Thr Gly Ser Asp Asp Ala Ile Lys Ser Ile				
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Leu Glu Gln Ala Lys Lys Glu Ile Glu Ser Gln Lys Gly Gly Glu Pro				
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Lys Thr Ser Val Ala Pro Leu Ser Ile Ala Asn Gly Thr Thr Pro Ala				
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Ser Thr Ser Glu Asp Ala Ile Lys Ser Ile Leu Glu Gln Ala Arg Arg				
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Arg Gly Arg Ser Val Pro Pro Ser Pro Pro Glu Arg Pro Ser Leu Ala				
685	690	695	700	
acc gcg agc cag aac ggg gcc ccg gcc ttg gtg aag cag gag gag ggc				2161
Thr Ala Ser Gln Asn Gly Ala Pro Ala Leu Val Lys Gln Glu Glu Gly				
701	706	711	716	
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Ser Gly Gly Pro Ala Gln Ala Pro Leu Pro Val Leu Ser Pro Ala Ala				
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Phe Val Gln Ser Ile Ile Arg Lys Val Lys Ser Glu Ile Gly Asp Ala				
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ggc tac ttc gac cac cac tgg gcc tcc gac cgc ggc ctg ctc agc cgc				2305
Gly Tyr Phe Asp His His Trp Ala Ser Asp Arg Gly Leu Leu Ser Arg				
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ccc tac gcc tcc gtg tcc ccc tcc ctg tcc tcc tcc tcc tcc tcc ggc				2353
Pro Tyr Ala Ser Val Ser Pro Ser Leu Ser Ser Ser Ser Ser Ser Gly				
765	770	775	780	

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Tyr Ser Gly Gln Pro Asn Gly Arg Ala Trp Pro Arg Gly Asp Glu Ala	
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cct gtg ccc ccc gag gac gag gcg gcg gca ggg gcg gag gac gaa ccc	2449
Pro Val Pro Pro Glu Asp Glu Ala Ala Ala Gly Ala Glu Asp Glu Pro	
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Pro Arg Thr Gly Glu Leu Lys Ala Glu Gly Ala Thr Ala Glu Ala Gly	
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Ala Arg Leu Pro Tyr Tyr Pro Ala Tyr Val Pro Arg Thr Leu Lys Pro	
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acc gtg ccg ccg ctg acc ccc gag cag tac gag ctg tac atg tac cgt	2593
Thr Val Pro Pro Leu Thr Pro Glu Gln Tyr Glu Leu Tyr Met Tyr Arg	
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Lys Asn Gly Ile Cys Gln Arg Ile Phe Gly Glu Lys Val Leu Gly Leu	
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Ser Gln Gly Ser Val Ser Asp Met Leu Ser Arg Pro Lys Pro Trp Ser	
893 898 903 908	
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Lys Leu Thr Gln Lys Gly Arg Glu Pro Phe Ile Arg Met Gln Leu Trp	
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ctc tct gac cag ctc ggc cag gca gtg ggc cag cag cct ggt gcc tcc	2833
Leu Ser Asp Gln Leu Gly Gln Ala Val Gly Gln Gln Pro Gly Ala Ser	
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Gln Ala Ser Pro Thr Glu Pro Arg Ser Ser Pro Ser Pro Pro Pro Ser	
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Pro Thr Glu Pro Glu Lys Ser Ser Gln Glu Pro Leu Ser Leu Ser Leu	
957 962 967 972	
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Glu Ser Ser Lys Glu Asn Gln Gln Pro Glu Gly Arg Ser Ser Ser Ser	
973 978 983 988	
ttg agc ggg aag atg tac tca ggc agc cag gcc cca ggg ggc atc cag	3025
Leu Ser Gly Lys Met Tyr Ser Gly Ser Gln Ala Pro Gly Gly Ile Gln	
989 994 999 1004	

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Glu Ile Val Ala Met Ser Pro Glu Leu Asp Thr Tyr Ser Ile Thr Lys	
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Arg Val Lys Glu Val Leu Thr Asp Asn Asn Leu Gly Gln Arg Leu Phe	
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Ser Arg Pro Lys Pro Trp His Lys Leu Ser Leu Lys Gly Arg Glu Pro	
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Phe Val Arg Met Gln Leu Trp Leu Asn Asp Pro His Asn Val Glu Lys	
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Leu Arg Asp Met Lys Lys Leu Glu Lys Lys Ala Tyr Leu Lys Arg Arg	
1085 1090 1095 1100	
tat ggc ctc atc agc acc ggc tca gac agt gag tcc ccg gcc acc cgc	3361
Tyr Gly Leu Ile Ser Thr Gly Ser Asp Ser Glu Ser Pro Ala Thr Arg	
1101 1106 1111 1116	
tca gag tgc ccc agc ccc tgc ctg cag ccc cag gac ctg agc ctc ctg	3409
Ser Glu Cys Pro Ser Pro Cys Leu Gln Pro Gln Asp Leu Ser Leu Leu	
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Leu Pro Pro Gly His Ser His Pro Asp Pro Thr Pro Gln Ser Pro Asp	
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1453

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Cys	Arg	Glu	Phe	Gly	Lys	Asp	Phe	Leu	Ala	Lys	Leu	Gly	Phe	Leu	His	
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Gln	Gln	Ala	Ala	His	Thr	Gly	Glu	Gln	Ser	Asn	Ser	Lys	Ser	Asp	Gly	
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Gly	Lys	Ser	Phe	Asn	Gln	Arg	Ser	Ala	Leu	Leu	Gln	His	Arg	Gly	Gly	
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cac	act	ggg	gag	agg	cct	tat	gag	tgc	agt	gaa	tgt	ggg	aag	ttt	ttt	1107
His	Thr	Gly	Glu	Arg	Pro	Tyr	Glu	Cys	Ser	Glu	Cys	Gly	Lys	Phe	Phe	
267					272					277					282	
ccc	tac	agc	tcc	agt	ctc	cga	aaa	cac	cag	aga	gtt	cac	act	gga	tca	1155
Pro	Tyr	Ser	Ser	Ser	Leu	Arg	Lys	His	Gln	Arg	Val	His	Thr	Gly	Ser	

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Arg Pro Tyr Glu Cys	Ser Glu Cys Gly Lys	Ser Phe Thr Gln Asn Ser		
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Gly Leu Ile Lys His	Arg Arg Val His Thr	Gly Glu Lys Pro Tyr Glu		
315	320	325	330	
tgc acg gaa tgt ggg	aaa tcc ttt agc cat	aac tcc agc ctt att aaa	1299	
Cys Thr Glu Cys Gly	Lys Ser Phe Ser His	Asn Ser Ser Leu Ile Lys		
331	336	341	346	
cat cag aga att cat	agt cga taa aaggcttatg	agtggcaaat gtggaaaatc	1353	
His Gln Arg Ile His	Ser Arg *			
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Val Leu Gln Leu Glu Val	Ala Pro Glu Ser Ser Gly Pro Cys Thr Asp
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Thr Ala Lys Asp Gln Gln Ser Asp Lys Leu Pro Asp Leu Met Pro Pro	
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Ala Val Ala Thr Gly Leu Ser Pro Gly Ala Glu Ser Ile Ala Gly Asp	
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His Ala Ala Pro Ser Pro Gly His Gly Ala Ser Leu Gly Val Arg Asp	
106 111 116 121	
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Gln Gly Val Gln Ser Glu Leu Leu Tyr Leu Thr Lys Glu Arg Pro Leu	
122 127 132 137	
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Leu Phe Thr Arg Ala Thr Ala Leu Leu Pro Gln Asp Leu Phe Ile Leu	
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Pro Val Leu Gly Leu Ser Ile Cys Lys Leu Glu Val Leu Arg Ala Gly	
154 159 164 169	
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Lys Gly Gly Cys Glu Glu Gly Phe Gly Gln Leu Leu Leu Leu Ser Glu	
170 175 180 185	
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Val Ala Ser Ser Ser Arg His Gly Gly Leu Ser Thr Thr Gly Leu Leu	
186 191 196 201	
ggc tat ttg ccc ctg att tgc tcc ctg gta cgg gct ctt gtt aac agg	856
Gly Tyr Leu Pro Leu Ile Cys Ser Leu Val Arg Ala Leu Val Asn Arg	
202 207 212 217	
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Gln Ala Arg Gly Ala Gly Thr Arg Gln Gly Leu Gln Arg Val Gln Tyr	
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Gln Ile Phe Gln Thr Gln His Leu Cys Pro Gly Val Ser Lys Leu Ser	
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Gln Ala Gly Leu Thr Gln Pro Pro Ser Val Ser Lys Gly Leu Arg Gln
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acc gcc aca ctc acc tgc act ggg aac agc aac aat gtt ggc gac caa      201
Thr Ala Thr Leu Thr Cys Thr Gly Asn Ser Asn Asn Val Gly Asp Gln
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gga gca tct tgg ctg cag cag cac cag ggc cac cct ccc aaa ctc ctc      249
Gly Ala Ser Trp Leu Gln Gln His Gln Gly His Pro Pro Lys Leu Leu
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tcc tac agg aat aac aac cgg ccc tca ggg atc tca gag aga tta tct      297
Ser Tyr Arg Asn Asn Asn Arg Pro Ser Gly Ile Ser Glu Arg Leu Ser
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gca tcc agg tca gga aac aca gcc tcc ctg acc att act gga ctc cag      345
Ala Ser Arg Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Leu Gln
  84                               89                               94                               99

cct gag gac gag gct gac tat tac tgc tca gca tgg gac agc agc ctc      393
Pro Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ala Trp Asp Ser Ser Leu
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agt gct tgg gtg ttc ggc gga ggg acc aag ctg acc gtc cta ggt cag      441
Ser Ala Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
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ccc aag gct gcc ccc tcg gtc act ctg ttc ccg ccc tcc tct gag gag      489
Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu
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ctt caa gcc aac aag gcc aca ctg gtg tgt ctc ata agt gac ttc tac      537
Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr
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Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr	
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Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His	
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Arg Ala Val Ile Phe Asp Met Gly Gly Val Leu Ile Pro Ser Pro Gly	
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Arg Val Ala Ala Glu Trp Glu Val Gln Asn Arg Ile Pro Ser Gly Thr	
59 64 69 74	
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Ile Leu Lys Ala Leu Met Glu Gly Gly Glu Asn Gly Pro Trp Met Arg	
75 80 85 90	
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Phe Met Arg Ala Glu Ile Thr Ala Glu Gly Phe Leu Arg Glu Phe Gly	
91 96 101 106	
aga ctt tgc tct gaa atg tta aag acc tcc gtg cct gtg gac tca ttt	568
Arg Leu Cys Ser Glu Met Leu Lys Thr Ser Val Pro Val Asp Ser Phe	
107 112 117 122	
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Phe Ser Leu Leu Thr Ser Glu Arg Val Ala Lys Gln Phe Pro Val Met	
123 128 133 138	
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Thr Glu Ala Ile Thr Gln Ile Arg Ala Lys Gly Leu Gln Thr Ala Val	
139 144 149 154	
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Leu Ser Asn Asn Phe Tyr Leu Pro Asn Gln Lys Ser Phe Leu Pro Leu	
155 160 165 170	
gac cgg aaa cag ttt gat gtg att gtg gag tcc tgc atg gaa ggg atc	760
Asp Arg Lys Gln Phe Asp Val Ile Val Glu Ser Cys Met Glu Gly Ile	
171 176 181 186	
tgt aag cca gac cct agg atc tac aag ctg tgc ttg gag cag ctc ggc	808
Cys Lys Pro Asp Pro Arg Ile Tyr Lys Leu Cys Leu Glu Gln Leu Gly	
187 192 197 202	
ctg cag ccc tct gag tcc atc ttt ctt gat gac ctt gga aca aat cta	856
Leu Gln Pro Ser Glu Ser Ile Phe Leu Asp Asp Leu Gly Thr Asn Leu	
203 208 213 218	
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Lys Glu Ala Ala Arg Leu Gly Ile His Thr Ile Lys Val Asn Asp Pro	
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Glu Thr Ala Val Lys Glu Leu Glu Ala Leu Leu Gly Phe Thr Leu Arg	
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gta ggt gtt cca aac act cgg cct gtg aaa aag acg atg gaa att ccg	1000
Val Gly Val Pro Asn Thr Arg Pro Val Lys Lys Thr Met Glu Ile Pro	
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Lys Asp Ser Leu Gln	Lys Tyr Leu Lys Asp	Leu Leu Gly Ile Gln Thr	
267	272	277	282
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Thr Gly Pro Leu Glu Leu Leu Gln Phe Asp His Gly Gln Ser Asn Pro			
283	288	293	298
act tac tac atc agg ctg gct aat cgt gat cta gtt ctg agg aag aag			1144
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ccc cca ggg aca ctc ctt cca tct gcc cat gcc ata gag agg gag ttc			1192
Pro Pro Gly Thr Leu Leu Pro Ser Ala His Ala Ile Glu Arg Glu Phe			
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Arg Ile Met Lys Ala Leu Ala Asn Ala Gly Val Pro Val Pro Asn Val			
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ctt gat ctc tgt gaa gat tca agt gtc att ggc acc ccc ttc tat gtg			1288
Leu Asp Leu Cys Glu Asp Ser Ser Val Ile Gly Thr Pro Phe Tyr Val			
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atg gag tac tgc cca ggt ctc atc tac aaa gac cct tcc ctg cca ggc			1336
Met Glu Tyr Cys Pro Gly Leu Ile Tyr Lys Asp Pro Ser Leu Pro Gly			
363	368	373	378
ttg gag ccc agc cac aga cga gcc ata tac act gcc atg aac aca gtc			1384
Leu Glu Pro Ser His Arg Arg Ala Ile Tyr Thr Ala Met Asn Thr Val			
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ctg tgc aaa att cac agt gtg gat ctg cag gct gtg gga ctt gaa gac			1432
Leu Cys Lys Ile His Ser Val Asp Leu Gln Ala Val Gly Leu Glu Asp			
395	400	405	410
tat ggg aag caa ggc tgc aca acc tgg tgt ttc atc cag aag agc cag			1480
Tyr Gly Lys Gln Gly Ser Thr Thr Trp Cys Phe Ile Gln Lys Ser Gln			
411	416	421	426
agg tgc ttg ctg tcc ttg act ggg aac ttt cta cct tgg gcg acc ccc			1528
Arg Cys Leu Leu Ser Leu Thr Gly Asn Phe Leu Pro Trp Ala Thr Pro			
427	432	437	442
ttg ctg atg tgg cct aca gct gcc tgg ctc att acc tgc cat cca gtt			1576
Leu Leu Met Trp Pro Thr Ala Ala Trp Leu Ile Thr Cys His Pro Val			
443	448	453	458
ttc ccg tgc tga gag gtattaatga ctgtgacttg acacagctgg gaatccctgc			1631
Phe Pro Cys *			
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gcgatcactc acaggtaatg ggatggctgc cctgaagagc cactgcgggc attctgccga			1811

catggaagcc atcacaaacg gcatgatgaa cctgaatcgc cagcgggcac agcaccttgt	1871
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				Met	Glu	Met	Glu	Gln	Glu							
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aaa atg acc atg aat aag gaa ttg agt cca gac gcg gct gct tac tgc											283					
Lys Met Thr Met Asn Lys Glu Leu Ser Pro Asp Ala Ala Ala Tyr Cys																
7											12	17				22
tgc tcg gcc tgc cac ggc gat gag acc tgg agt tac aac cac ccc atc											331					
Cys Ser Ala Cys His Gly Asp Glu Thr Trp Ser Tyr Asn His Pro Ile																
23											28	33				38
cgg ggc cgg gcc aag tct cgc agc ctg tct gcc tcg ccc gcc ctg ggg											379					
Arg Gly Arg Ala Lys Ser Arg Ser Leu Ser Ala Ser Pro Ala Leu Gly																
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agc acc aag gag ttc agg agg aca cgc tct ctt cat ggg cca tgc ccg											427					
Ser Thr Lys Glu Phe Arg Arg Thr Arg Ser Leu His Gly Pro Cys Pro																
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gtg acc act ttt gga cca aag gcc tgt gtg ctg cag aac ccc cag acc											475					
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71											76	81				86
atc atg cac att cag gac ccc gcg agc cag cgg ctg acg tgg aac aag											523					
Ile Met His Ile Gln Asp Pro Ala Ser Gln Arg Leu Thr Trp Asn Lys																
87											92	97				102
tcc cca aag agc gtc ctt gtc atc aag aag atg aga gat gcc agc cta											571					
Ser Pro Lys Ser Val Leu Val Ile Lys Lys Met Arg Asp Ala Ser Leu																
103											108	113				118

ctg	cag	ccg	ttc	aag	gag	ctc	tgc	acg	cac	ctc	atg	gag	gag	aac	atg	619
Leu	Gln	Pro	Phe	Lys	Glu	Leu	Cys	Thr	His	Leu	Met	Glu	Glu	Asn	Met	
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Ile	Val	Tyr	Val	Glu	Lys	Lys	Val	Leu	Glu	Asp	Pro	Ala	Ile	Ala	Ser	
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Asp	Glu	Ser	Phe	Gly	Ala	Val	Lys	Lys	Lys	Phe	Cys	Thr	Phe	Arg	Glu	
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Asp	Tyr	Asp	Asp	Ile	Ser	Asn	Gln	Ile	Asp	Phe	Ile	Ile	Cys	Leu	Gly	
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gga	gac	ggg	acg	ctg	ctg	tac	gct	tcc	tcg	ctt	ttc	cag	gga	acg	cag	811
Gly	Asp	Gly	Thr	Leu	Leu	Tyr	Ala	Ser	Ser	Leu	Phe	Gln	Gly	Thr	Gln	
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Leu	Leu	Phe	Ser	Gly	Val	Gly	*				
199					204						

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agatcaattt	aaagcttgaa	atcaaatagt	tacaggactg	aagtcaatat	tttggtagat	240
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gacagtcaat	aaaaatgtaa	attagataca	ctacatctat	tacaaccaac	agcaacgagc	300
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g atg act acc gaa gga cat cat tgg cta aca aat gct aga tta acc	646
Met Thr Thr Glu Gly His His Trp Leu Thr Asn Ala Arg Leu Thr	
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Lys Tyr Gln Ser Leu Pro Cys Glu Asn Pro His Ile Thr Ile Glu Val	
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Cys Asn Thr Leu Asn Pro Thr Thr Leu Leu Pro Val Ser Glu Ser Pro	
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ggc gag cat aac tgt gta gag gtg ttg gac tca gtc tat tct agc aga	790
Gly Glu His Asn Cys Val Glu Val Leu Asp Ser Val Tyr Ser Ser Arg	
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Pro Asp Leu Arg Asp Gln Pro Trp Ala Ser Ser Val Asp Trp Glu Leu	
64 69 74 79	
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Tyr Met Asp Gly Ser Ser Phe Ile Asn Ser Gln Gly Glu Arg Cys Ala	
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Gly Tyr Ala Val Val Thr Leu Asp Ala Val Ile Lys Ala Lys Leu Trp	
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Val Ser Pro His Ile Gln Ala Tyr Gly Ala Ala Pro Phe Glu Asp Leu	
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Arg Thr Glu Lys Ala Tyr Glu Val Thr Arg Val Leu Leu Arg Asp Leu	
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Val Phe Val Ala Asp Leu Asp Cys Val Glu Ile Asn Val Asp Thr Gly	
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Val Ile Trp Ala Thr Trp Ile Lys Asn Glu Lys Asp Pro Val Gln Leu	
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Leu Glu Leu Val Ile Thr Asn Pro Leu Asp Pro Arg Trp Lys Lys Gly	
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Ser Leu Thr Val Thr Ser Cys Tyr Val Cys Gly Gly Thr Val Ile Ala	
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Asp Gln Trp Pro Trp Glu Ala Arg Glu Leu Val Pro Thr Asp Pro Val	
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Pro Asp Glu Phe Pro Ala Gln Lys Asn His	Pro Asp Asn Phe Trp Val	
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Asp Phe Thr Leu Pro Val Gly Arg Leu His	Gly Gly Val Gln Thr Thr	
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Gln Arg Lys Ile His Ser Val Asn Phe Gln	Ser Cys Arg Pro Phe Arg	
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Pro Thr Gln Asn Pro Thr Gly Thr Gly Gln	Pro Pro Leu Gly Tyr Thr	
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Gly Tyr Val Asp Ile Glu Pro Thr Leu Ser	Cys Leu Thr Ser Ser Cys	
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Val Ile Gly Thr Ile Lys Pro Ser Phe Phe	Leu Leu Ser Ile Lys Thr	
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Tyr Lys Lys Leu Lys Gln *		
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 Met Ser Trp Arg Gly Arg Ser Thr Tyr Arg Pro Arg Pro Arg Arg Ser
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 gag cct aaa gaa gag aaa cca ccc act aaa agt cgg aat cct aca cct 383
 Glu Pro Lys Glu Glu Lys Pro Pro Thr Lys Ser Arg Asn Pro Thr Pro
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 Asp Leu Glu Ala Asp Leu Gln Glu Leu Cys Gln Thr Lys Thr Gly Asp
 65 70 75 80
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 Gly Cys Glu Gly Gly Thr Asp Val Lys Gly Lys Ile Leu Pro Lys Ala

81	86	91	96	
gag cac ttt aaa atg cca gaa gca ggt gaa ggg aaa tca cag gtt taa 575				
Glu His Phe Lys Met Pro Glu Ala Gly Glu Gly Lys Ser Gln Val *				
97	102	107	112	

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Leu	Ser	Gly	Glu	Asp	Glu	Glu	Ser	Leu	Ser	Thr	Gln	Thr	Pro	Thr	Pro	
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Ser	Arg	Thr	Ser	Trp	Gly	Pro	His	Arg	Ser	Cys	Tyr	Pro	Ser	Cys	Pro	
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gcc	cgt	gag	tcc	aac	cgg	cgc	ctc	tgg	cca	aga	aag	gcg	agc	tga	acc	912
Ala	Arg	Glu	Ser	Asn	Arg	Arg	Leu	Trp	Pro	Arg	Lys	Ala	Ser	*		
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Tyr	Lys	Met	Lys	Thr	Asp	His	Phe	Ser	Leu	Arg	Tyr	Leu	His	Ser	Ser	
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Cys	Ala	Glu	Asp	Asn	Lys	Ser	Ser	Val	Asp	Ser	Ser	Gly	Gln	Ala	Ala	
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cac	ccc	agc	aaa	ggg	aag	ttc	ttc	ccc	cat	ggg	acc	cac	tgg	ggg	acc	434
His	Pro	Ser	Lys	Gly	Lys	Phe	Phe	Pro	His	Gly	Thr	His	Trp	Gly	Thr	
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Gln	Cys	Arg	Gly	His	Ile	Ser	Val	Leu	Gly	Trp	Gln	Cys	Ser	Cys	Pro	
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Val Ser Ala Ala Leu Gln Phe Ser Leu Ser Cys Ile Phe Leu Arg Glu						
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Gly Lys Ala Thr Asp Glu Asp Met Gln Ser Leu Ala Ser Leu Met Ser						
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Ile Thr Glu Leu Ile Asn Lys Leu Asn Phe Leu Asp Glu Ala Glu Lys						
83 88 93 98						
gac ttg gcc acc gtg aat tca aat cca ttt gat gat cct gat gct gca	391					
Asp Leu Ala Thr Val Asn Ser Asn Pro Phe Asp Asp Pro Asp Ala Ala						
99 104 109 114						
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Glu Leu Asn Pro Phe Gly Asp Pro Asp Ser Glu Glu Pro Ile Thr Glu						
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147 152 157 162						
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Glu Pro Glu Ala Phe Val Thr Ile Lys Asp Ser Pro Pro Gln Ser Thr						

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Lys Arg Lys Asn Ile	Arg Pro Val Asp Met	Ser Lys Tyr Leu Tyr	Ala	
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Asp Ser Ser Lys Thr	Glu Glu Glu Glu Leu	Asp Glu Ser Asn Pro	Phe	
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tat gaa cct aaa tca act	cct cct cct cca aat	aat ttg gta aat cct	gtt	727
Tyr Glu Pro Lys Ser	Thr Pro Pro Pro Asn	Asn Leu Val Asn Pro	Val	
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caa gaa cta gaa act	gaa agg cga gtg aaa	aga aag gcc ccg gct	cca	775
Gln Glu Leu Glu Thr	Glu Arg Arg Val Lys	Arg Lys Ala Pro Ala	Pro	
227	232	237	242	
cca gtc ctc tca cca	aaa aca gga gta tta	aat gaa aac aca gtt	tct	823
Pro Val Leu Ser Pro	Lys Thr Gly Val Leu	Asn Glu Asn Thr Val	Ser	
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gca gga aaa gat ctc	tct act tct cct aag	cca agc cct ata cca	agt	871
Ala Gly Lys Asp Leu	Ser Thr Ser Pro Lys	Pro Ser Pro Ile Pro	Ser	
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cct gtt ttg ggg cga	aag cca aat gct agt	cag tct ttg ctt gta	tgg	919
Pro Val Leu Gly Arg	Lys Pro Asn Ala Ser	Gln Ser Leu Leu Val	Trp	
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Cys Lys Glu Val Thr	Lys Asn Tyr Arg Gly	Val Lys Ile Thr Asn	Phe	
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Thr Thr Ser Trp Arg	Asn Gly Leu Ser Phe	Cys Ala Ile Leu His	His	
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Phe Arg Pro Asp Leu	Ile Asp Tyr Lys Ser	Leu Asn Pro Gln Asp	Ile	
323	328	333	338	
aaa gag aac aac aaa	aag gca tac gat gga	ttt gcc agc ata gga	att	1111
Lys Glu Asn Asn Lys	Lys Ala Tyr Asp Gly	Phe Ala Ser Ile Gly	Ile	
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Ser Arg Leu Leu Glu	Pro Ser Asp Met Val	Leu Leu Ala Ile Pro	Asp	
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Gly Gln Glu Leu Asn	Val Val Gln Ile Glu	Glu Asn Ser Ser Lys	Ser	
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Thr Tyr Lys Val Gly Asn Tyr Glu Thr Asp Thr Asn Ser Ser Val Asp	
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Gln Glu Lys Phe Tyr Ala Glu Leu Ser Asp Leu Lys Arg Glu Pro Glu	
419 424 429 434	
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Leu Gln Gln Pro Ile Ser Gly Ala Val Asp Phe Leu Ser Gln Asp Asp	
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Ser Val Phe Val Asn Asp Ser Gly Val Gly Glu Ser Glu Ser Glu His	
451 456 461 466	
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Gln Thr Pro Asp Asp His Leu Ser Pro Ser Thr Ala Ser Pro Tyr Cys	
467 472 477 482	
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483 488 493 498	
gga agg act tca gga tct gat gac cct gga ata tgt tcc aat aca gat	1591
Gly Arg Thr Ser Gly Ser Asp Asp Pro Gly Ile Cys Ser Asn Thr Asp	
499 504 509 514	
tca acc caa gca cag gtt ttg tta ggc aaa aag aga cta ttg aaa gct	1639
Ser Thr Gln Ala Gln Val Leu Leu Gly Lys Lys Arg Leu Leu Lys Ala	
515 520 525 530	
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Glu Thr Leu Glu Leu Ser Asp Leu Tyr Val Ser Asp Lys Lys Lys Asp	
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Thr Leu Asp Ile Gly Ser Asn Leu Glu Lys Glu Lys Leu Glu Asn Ser	
563 568 573 578	
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Arg Ser Leu Glu Cys Arg Ser Asp Pro Glu Ser Pro Ile Lys Lys Thr	
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Ser Leu Ser Pro Thr Ser Lys Leu Gly Tyr Ser Tyr Ser Arg Asp Leu	
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611 616 621 626	

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Pro Asp Ala Asp Arg Thr Thr Leu Asn His Ala Asp His Ser Ser Lys	
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gca aga gtt ctg ctt gag caa gca aga aga gat gca gcc tta aag gcg	2071
Ala Arg Val Leu Leu Glu Gln Ala Arg Arg Asp Ala Ala Leu Lys Ala	
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Gly Asn Lys His Asn Thr Asn Thr Ala Thr Pro Phe Cys Asn Arg Gln	
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Leu Ser Asp Gln Gln Asp Glu Glu Arg Arg Arg Gln Leu Arg Glu Arg	
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Leu Pro Ser Tyr Gly Glu Met Ala Ala Glu Lys Leu Lys Glu Arg Ser	
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Cys Lys Glu Val Thr Lys Asn Tyr Arg Gly Val Lys Ile Thr Asn Phe	
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Thr Tyr Lys Val Gly Asn Tyr Glu Thr Asp Thr Asn Ser Ser Val Asp	
403 408 413 418	
caa gaa aaa ttc tat gca gag ctt agt gat ctg aag cgg gag cct gaa	1351
Gln Glu Lys Phe Tyr Ala Glu Leu Ser Asp Leu Lys Arg Glu Pro Glu	
419 424 429 434	
cta caa cag cct atc agc gga gca gta gac ttc tta tca cag gat gac	1399
Leu Gln Gln Pro Ile Ser Gly Ala Val Asp Phe Leu Ser Gln Asp Asp	
435 440 445 450	
tct gta ttt gta aat gat agc ggg gtt gga gag tca gaa agt gag cat	1447
Ser Val Phe Val Asn Asp Ser Gly Val Gly Glu Ser Glu Ser Glu His	
451 456 461 466	
caa act cct gat gat cac ctt agt cca agc aca gcc tcc cct tac tgt	1495
Gln Thr Pro Asp Asp His Leu Ser Pro Ser Thr Ala Ser Pro Tyr Cys	
467 472 477 482	
cgc agg act aaa agt gac aca gaa ccc cag aag tct cag cag agc tct	1543
Arg Arg Thr Lys Ser Asp Thr Glu Pro Gln Lys Ser Gln Gln Ser Ser	

ctt ccc agc tat ggt gaa atg gct gca gaa aag ttg aaa gaa agg tca	2263
Leu Pro Ser Tyr Gly Glu Met Ala Ala Glu Lys Leu Lys Glu Arg Ser	
723 728 733 738	
aag gca tct gga gaa caa aac agt aag ttg gtg gac ttg aag ctg aag	2311
Lys Ala Ser Gly Glu Gln Asn Ser Lys Leu Val Asp Leu Lys Leu Lys	
739 744 749 754	
aag ctc cta gaa gtt cag cca cag gtg gca aat tca ccc tcc agt gct	2359
Lys Leu Leu Glu Val Gln Pro Gln Val Ala Asn Ser Pro Ser Ser Ala	
755 760 765 770	
gcc cag aaa gct gta act gag agc tca gag cag gac atg aaa agt ggc	2407
Ala Gln Lys Ala Val Thr Glu Ser Ser Glu Gln Asp Met Lys Ser Gly	
771 776 781 786	
aca gaa gat ctc cgg act gaa cga tta caa aaa aca aca gaa cgt ttt	2455
Thr Glu Asp Leu Arg Thr Glu Arg Leu Gln Lys Thr Thr Glu Arg Phe	
787 792 797 802	
aga aat cct gtt gtg ttc agc aaa gat tct aca gtc aga aaa act caa	2503
Arg Asn Pro Val Val Phe Ser Lys Asp Ser Thr Val Arg Lys Thr Gln	
803 808 813 818	
ctt cag tct ttc agc caa tat att gag aat aga cca gag atg aaa agg	2551
Leu Gln Ser Phe Ser Gln Tyr Ile Glu Asn Arg Pro Glu Met Lys Arg	
819 824 829 834	
cag aga tca ata cag gaa gat aca aag aaa gga aat gag gag aag gca	2599
Gln Arg Ser Ile Gln Glu Asp Thr Lys Lys Gly Asn Glu Glu Lys Ala	
835 840 845 850	
gcg ata act gaa act cag agg aag cca tca gaa gat gaa gtg ctt aat	2647
Ala Ile Thr Glu Thr Gln Arg Lys Pro Ser Glu Asp Glu Val Leu Asn	
851 856 861 866	
aaa ggg ttc aaa gac acc agt cag tat gta gta gga gaa ttg gca gca	2695
Lys Gly Phe Lys Asp Thr Ser Gln Tyr Val Val Gly Glu Leu Ala Ala	
867 872 877 882	
cta gag aat gag caa aag caa att gac acc cgt gcc gcg ctg gtg gag	2743
Leu Glu Asn Glu Gln Lys Gln Ile Asp Thr Arg Ala Ala Leu Val Glu	
883 888 893 898	
aag cgc ctt cgc tat ctc atg gac aca gga agg aac aca gaa gaa gaa	2791
Lys Arg Leu Arg Tyr Leu Met Asp Thr Gly Arg Asn Thr Glu Glu Glu	
899 904 909 914	
gaa gct atg atg cag gaa tgg ttt atg tta gtt aat aag aaa aat gcc	2839
Glu Ala Met Met Gln Glu Trp Phe Met Leu Val Asn Lys Lys Asn Ala	
915 920 925 930	
tta ata agg aga atg aat cag ctc tct ctt ctg gaa aaa gaa cat gat	2887
Leu Ile Arg Arg Met Asn Gln Leu Ser Leu Leu Glu Lys Glu His Asp	
931 936 941 946	

tta gaa cga cgg tat	gag ctg ctg aac cgg	gaa ttg agg gca atg cta	2935
Leu Glu Arg Arg Tyr	Glu Leu Leu Asn Arg	Glu Leu Arg Ala Met Leu	
947	952	957 962	
gcc att gaa gac tgg	cag aag acc gag gcc	cag aag cga cgc gaa cag	2983
Ala Ile Glu Asp Trp	Gln Lys Thr Glu Ala	Gln Lys Arg Arg Glu Gln	
963	968	973 978	
ctt ctg cta gat gag	ctg gtg gcc ctg gtg	aac aag cgc gat gcg ctc	3031
Leu Leu Leu Asp Glu	Leu Val Ala Leu Val	Asn Lys Arg Asp Ala Leu	
979	984	989 994	
gtc agg gac ctg gac	gcg cag gag aag cag	gcc gaa gaa gaa gat gag	3079
Val Arg Asp Leu Asp	Ala Gln Glu Lys Gln	Ala Glu Glu Glu Asp Glu	
995	1000	1005 1010	
cat ttg gag cga act	ctg gag caa aac aaa	ggc aag atg gcc aag aaa	3127
His Leu Glu Arg Thr	Leu Glu Gln Asn Lys	Gly Lys Met Ala Lys Lys	
1011	1016	1021 1026	
gag gag aaa tgt gtt	ctt cag tag ccatcagatc	agaaagaatc tctcccaaca	3181
Glu Glu Lys Cys Val	Leu Gln *		
1027	1032		
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ctccctcctt tccaaataat	atacagaact ccaaaatagc	ttcattttaag gatttttttg	3361
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taatatttat tctgtattga	taaaaagtct gtcttgccac	tacaagtaaa tccccattt	4021
aatattttct tctttagcat	agcactgtca ttttttgtga	aaatgggttat gtttatttat	4081
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aaaaaaaa			4150

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	Met	
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agg agg aca gct ttg atc ctg ggc tct gga ctt ctc tca ttt gtg gcc		104
Arg Arg Thr Ala Leu Ile Leu Gly Ser Gly Leu Leu Ser Phe Val Ala		
2 7 12 17		
ttc tgg aac tca gtg aca tgg cat ctt cag aga ttt tgg ggt gct tct		152
Phe Trp Asn Ser Val Thr Trp His Leu Gln Arg Phe Trp Gly Ala Ser		
18 23 28 33		
ggc tac ttt tgg caa gcc cag tgg gag agg ctg ctg act aca ttt gaa		200
Gly Tyr Phe Trp Gln Ala Gln Trp Glu Arg Leu Leu Thr Thr Phe Glu		
34 39 44 49		
ggg aag gag tgg atc ctc ttc ttt ata ggt gcc atc caa gtg cct tgt		248
Gly Lys Glu Trp Ile Leu Phe Phe Ile Gly Ala Ile Gln Val Pro Cys		
50 55 60 65		
ctc ttc ttc tgg agc ttc aat ggg ctt cta ttg gtg gtt gac aca aca		296
Leu Phe Phe Trp Ser Phe Asn Gly Leu Leu Val Val Asp Thr Thr		
66 71 76 81		
gga aaa cct aac ttc atc tct cgc tac cga att cag gtc ggc aag aat		344
Gly Lys Pro Asn Phe Ile Ser Arg Tyr Arg Ile Gln Val Gly Lys Asn		
82 87 92 97		
gaa cct gtg gat cct gtg aaa ctg cac cag tgc atg ata tct ttc ccc		392
Glu Pro Val Asp Pro Val Lys Leu His Gln Cys Met Ile Ser Phe Pro		
98 103 108 113		
atg gtg gtc ttc ctc tat ccc ttc ctc aaa tgg tgg aga gac ccc tgc		440
Met Val Val Phe Leu Tyr Pro Phe Leu Lys Trp Trp Arg Asp Pro Cys		
114 119 124 129		
cgc cgt gag cta ccc acc ttc cac tgg ttc ctc ctg gag ctg gcc atc		488
Arg Arg Glu Leu Pro Thr Phe His Trp Phe Leu Leu Glu Leu Ala Ile		
130 135 140 145		
ttc acg ctg atc gag gaa gtc ttg ttc tac tat tca cac cgg ctc ctt		536
Phe Thr Leu Ile Glu Glu Val Leu Phe Tyr Tyr Ser His Arg Leu Leu		
146 151 156 161		

cac cac cca aca ttc	tac aag aaa atc	cac aag aaa cac cat	gag tgg	584
His His Pro Thr Phe	Tyr Lys Lys Ile	His Lys Lys His His	Glu Trp	
162	167	172	177	

aca gct ccc att ggc	gtg atc tct ctc	tat gcc cac cct	ata gag cat	632
Thr Ala Pro Ile Gly	Val Ile Ser Leu	Tyr Ala His Pro	Ile Glu His	
178	183	188	193	

gca gtc tcc aac atg	cta ccg gtg ata	gtg ggc cca tta	gta atg ggc	680
Ala Val Ser Asn Met	Leu Pro Val Ile	Val Gly Pro Leu	Val Met Gly	
194	199	204	209	

tcc cac ttg tcc tcc	atc acc atg tgg	ttt tcc ttg gcc	ctc atc atc	728
Ser His Leu Ser Ser	Ile Thr Met Trp	Phe Ser Leu Ala	Leu Ile Ile	
210	215	220	225	

acc acc atc tcc cac	tgt ggc tac cac	ctt ccc ttc ctg	cct tgc cct	776
Thr Thr Ile Ser His	Cys Gly Tyr His	Leu Pro Phe Leu	Pro Ser Pro	
226	231	236	241	

gaa ttc cac gac tac	cac cat ctc aag	ttc aac cag tgc	tat ggg gtg	824
Glu Phe His Asp Tyr	His His Leu Lys	Phe Asn Gln Cys	Tyr Gly Val	
242	247	252	257	

ctg ggt gtg ctg gac	cac ctc cat ggg	act gac acc atg	ttc aag cag	872
Leu Gly Val Leu Asp	His Leu His Gly	Thr Asp Thr Met	Phe Lys Gln	
258	263	268	273	

acc aag gcc tac gag	aga cat gtc ctc	ctg ctg ggc ttc	acc ccg ctc	920
Thr Lys Ala Tyr Glu	Arg His Val Leu	Leu Leu Gly Phe	Thr Pro Leu	
274	279	284	289	

tct gag agc atc cca	gac tcc cca aag	agg atg gag tga	gagacagcct	969
Ser Glu Ser Ile Pro	Asp Ser Pro Lys	Arg Met Glu *		
290	295	300		

aagtgtcatc ctggctgtcc	ctcagccatg ggatgcagac	acggcttcct gattgcacct	1029
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aacaatttgc ctccttcggc	cacacgcct aatgatggca	ccaccagggt agaggggaagg	1089
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tcggcttccc ggaaaagcag	ggccaaggat gaggctttct	tcaaactact gcccttgatg	1149
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tccctcaatg ggatcaggag	ttagcttaag aaaaaggaaa	acacagctcc ccagactgga	1209
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ggctggtcag agggaggaga	cccctggctc tctgctgtgg	aaggagaggg gttcagcccc	1269
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agataactcc tttgtggcct	gggcaggatg cagagaatga	caaggctgaa aggaggggga	1329
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<213> Homo sapiens

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<222> (323)..(2020)

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aaggcgccgg gaccgcggagg aaccggaaaa aacagaactc agcgaaagag agctggcagt 180

agcagtggcg gtgtcccagg agaacgatga ggagaacgaa gagcgctggg ttggaccttt 240

acctgtggag gcaacactgg ccaagaagag gaaagtctta gagtttgaaa gagtctatct 300

tgataatctc cccagtgcac cc atg tat gag cgc agt tac atg cat aga gat 352

Met Tyr Glu Arg Ser Tyr Met His Arg Asp

1 5

gtt atc acc cat gtg gta tgc acc aaa aca gat ttt att att act gcc 400

Val Ile Thr His Val Val Cys Thr Lys Thr Asp Phe Ile Ile Thr Ala

11 16 21 26

agt cat gat gga cat gtc aag ttc tgg aaa aaa ata gaa gag gga att 448

Ser His Asp Gly His Val Lys Phe Trp Lys Lys Ile Glu Glu Gly Ile

27 32 37 42

gaa ttt gtt aaa cat ttt cgt agt cac ctg gga gtt att gag agt att 496

Glu Phe Val Lys His Phe Arg Ser His Leu Gly Val Ile Glu Ser Ile

43 48 53 58

gca gtt agc tct gag gga gca ttg ttc tgt tct gtg ggt gat gat aaa 544

Ala Val Ser Ser Glu Gly Ala Leu Phe Cys Ser Val Gly Asp Asp Lys

59 64 69 74

gca atg aag gtg ttt gat gta gtg aac ttt gac atg atc aac atg ctg 592

Ala Met Lys Val Phe Asp Val Val Asn Phe Asp Met Ile Asn Met Leu

75 80 85 90

aaa ctt ggc tat ttt cct gga cag tgt gag tgg atc tat tgc cca ggg 640

Lys Leu Gly Tyr Phe Pro Gly Gln Cys Glu Trp Ile Tyr Cys Pro Gly

91 96 101 106

gat gca att tct tca gtt gct gct tcc gaa aag agt aca gga aaa att 688

Asp Ala Ile Ser Ser Val Ala Ala Ser Glu Lys Ser Thr Gly Lys Ile

107 112 117 122

ttc att tat gat ggc cga gga gat aac cag cca ctt cat att ttt gac 736

Phe Ile Tyr Asp Gly Arg Gly Asp Asn Gln Pro Leu His Ile Phe Asp

123 128 133 138

aaa ctc cat aca tca cct ctt act cag ata cgg cta aac cca gtt tac 784

Lys Leu His Thr Ser Pro Leu Thr Gln Ile Arg Leu Asn Pro Val Tyr

139 144 149 154

aaa gca gta gtg tct tct gac aaa tct ggg atg att gaa tac tgg act	832
Lys Ala Val Val Ser Ser Asp Lys Ser Gly Met Ile Glu Tyr Trp Thr	
155 160 165 170	
ggg cct cct cat gaa tat aaa ttc ccc aaa aat gtg aac tgg gaa tat	880
Gly Pro Pro His Glu Tyr Lys Phe Pro Lys Asn Val Asn Trp Glu Tyr	
171 176 181 186	
aaa act gac act gat tta tat gaa ttt gcc aag tgt aag gct tat cca	928
Lys Thr Asp Thr Asp Leu Tyr Glu Phe Ala Lys Cys Lys Ala Tyr Pro	
187 192 197 202	
acc agc gta tgt ttt tca cca gat ggg aag aaa ata gct act att ggt	976
Thr Ser Val Cys Phe Ser Pro Asp Gly Lys Lys Ile Ala Thr Ile Gly	
203 208 213 218	
tct gat aga aaa gtt aga att ttc aga ttt gta act gga aaa ctc atg	1024
Ser Asp Arg Lys Val Arg Ile Phe Arg Phe Val Thr Gly Lys Leu Met	
219 224 229 234	
aga gtc ttt gat gaa tca cta agc atg ttt act gaa ctg caa cag atg	1072
Arg Val Phe Asp Glu Ser Leu Ser Met Phe Thr Glu Leu Gln Gln Met	
235 240 245 250	
agg caa cag tta cca gac atg gaa ttt ggc cga cga atg gct gta gaa	1120
Arg Gln Gln Leu Pro Asp Met Glu Phe Gly Arg Arg Met Ala Val Glu	
251 256 261 266	
cgt gag ttg gag aag gtt gat gct gta aga tta att aat ata gtt ttt	1168
Arg Glu Leu Glu Lys Val Asp Ala Val Arg Leu Ile Asn Ile Val Phe	
267 272 277 282	
gat gaa act gga cac ttc gtg ctg tat gga aca atg ctg ggc att aaa	1216
Asp Glu Thr Gly His Phe Val Leu Tyr Gly Thr Met Leu Gly Ile Lys	
283 288 293 298	
gtt ata aat gta gag aca aac cgg tgt gtg cgg att tta ggc aaa caa	1264
Val Ile Asn Val Glu Thr Asn Arg Cys Val Arg Ile Leu Gly Lys Gln	
299 304 309 314	
gaa aat att aga gtg atg caa ttg gct ttg ttc cag ggg ata gcc aaa	1312
Glu Asn Ile Arg Val Met Gln Leu Ala Leu Phe Gln Gly Ile Ala Lys	
315 320 325 330	
aag cat cgt gct gca act act ata gaa atg aaa gct tct gaa aat cct	1360
Lys His Arg Ala Ala Thr Thr Ile Glu Met Lys Ala Ser Glu Asn Pro	
331 336 341 346	
gtt ctt cag aat att caa gct gac cca aca ata gtc tgt aca tca ttc	1408
Val Leu Gln Asn Ile Gln Ala Asp Pro Thr Ile Val Cys Thr Ser Phe	
347 352 357 362	
aaa aag aat aga ttt tat atg ttt acc aaa cga gaa cca gaa gat acg	1456
Lys Lys Asn Arg Phe Tyr Met Phe Thr Lys Arg Glu Pro Glu Asp Thr	
363 368 373 378	
aaa agt gca gat tct gat cga gat gtt ttt aat gag aaa cct tct aaa	1504

Lys Ser Ala Asp Ser Asp Arg Asp Val Phe Asn Glu Lys Pro Ser Lys	
379 384 389 394	
gaa gaa gtc atg gca gct act caa gct gaa gga cct aaa cga gtt tcg	1552
Glu Glu Val Met Ala Ala Thr Gln Ala Glu Gly Pro Lys Arg Val Ser	
395 400 405 410	
gac agt gcc att atc cac acc agc atg gga gac att cac acc aaa ctt	1600
Asp Ser Ala Ile Ile His Thr Ser Met Gly Asp Ile His Thr Lys Leu	
411 416 421 426	
ttt cct gtt gag tgc cct aag aca gtg gaa aac ttc tgt gtt cac agc	1648
Phe Pro Val Glu Cys Pro Lys Thr Val Glu Asn Phe Cys Val His Ser	
427 432 437 442	
aga aat ggt tat tat aat ggg cat aca ttt cac cgt ata att aag ggc	1696
Arg Asn Gly Tyr Tyr Asn Gly His Thr Phe His Arg Ile Ile Lys Gly	
443 448 453 458	
ttt atg att cag act gga gat cca aca ggt act ggt atg gga gga gaa	1744
Phe Met Ile Gln Thr Gly Asp Pro Thr Gly Thr Gly Met Gly Gly Glu	
459 464 469 474	
agc ata tgg gga gga gaa ttt gaa gat gaa ttt cat tca aca tta cga	1792
Ser Ile Trp Gly Gly Glu Phe Glu Asp Glu Phe His Ser Thr Leu Arg	
475 480 485 490	
cat gac agg cca tac aca ctc agc atg gct aac gcg gga tca aat act	1840
His Asp Arg Pro Tyr Thr Leu Ser Met Ala Asn Ala Gly Ser Asn Thr	
491 496 501 506	
aat gga tcc cag ttt ttc ata acg gta gta cca acg cct tgg ctt gat	1888
Asn Gly Ser Gln Phe Phe Ile Thr Val Val Pro Thr Pro Trp Leu Asp	
507 512 517 522	
aat aag cat aca gta ttt gga cga gtg act aaa gga atg gaa gtt gta	1936
Asn Lys His Thr Val Phe Gly Arg Val Thr Lys Gly Met Glu Val Val	
523 528 533 538	
cag agg atc tcc aac gtc aaa gtc aat ccc aaa aca gat aag ccc tat	1984
Gln Arg Ile Ser Asn Val Lys Val Asn Pro Lys Thr Asp Lys Pro Tyr	
539 544 549 554	
gag gat gtc agc atc ata aat att act gtc aag taa aata agatttgttt	2034
Glu Asp Val Ser Ile Ile Asn Ile Thr Val Lys *	
555 560 565	
taatgtactt gcaaataaaa atacaatat aaacagatta ttttacatta ggaagcttag	2094
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 Met Ala Ala Ser Arg Lys Pro Pro Arg Val Arg Val
 1 5 10

aat cac cag gat ttt caa ctg aga aat tta aga ata att gaa cct aac 159
 Asn His Gln Asp Phe Gln Leu Arg Asn Leu Arg Ile Ile Glu Pro Asn
 13 18 23 28

gag gtg aca cac tca gga gac aca ggt gtg gaa aca gac ggc aga atg 207
 Glu Val Thr His Ser Gly Asp Thr Gly Val Glu Thr Asp Gly Arg Met
 29 34 39 44

cct cca aag gtg act tca gag ctg ctt cgg cag ctg aga caa gcc atg 255
 Pro Pro Lys Val Thr Ser Glu Leu Leu Arg Gln Leu Arg Gln Ala Met
 45 50 55 60

agg aac tct gag tat gtg acc gaa ccg atc cag gcc tac atc atc cca 303
 Arg Asn Ser Glu Tyr Val Thr Glu Pro Ile Gln Ala Tyr Ile Ile Pro
 61 66 71 76

tcg gga gat gct cat cag agt gag tat att gct cca tgt gac tgt cgg 351
 Ser Gly Asp Ala His Gln Ser Glu Tyr Ile Ala Pro Cys Asp Cys Arg
 77 82 87 92

cgg gct ttt gtc tct gga ttc gat ggc tct gcg ggc aca gcc atc atc 399
 Arg Ala Phe Val Ser Gly Phe Asp Gly Ser Ala Gly Thr Ala Ile Ile
 93 98 103 108

aca gaa gag cat gca gcc atg tgg act gac ggg cgc tac ttt ctc cag 447
 Thr Glu Glu His Ala Ala Met Trp Thr Asp Gly Arg Tyr Phe Leu Gln
 109 114 119 124

gct gcc aag caa atg gac agc aac tgg aca ctt atg aag atg ggt ctg 495
 Ala Ala Lys Gln Met Asp Ser Asn Trp Thr Leu Met Lys Met Gly Leu
 125 130 135 140

aag gac aca cca act cag gaa gac tgg ctg gtg agt gtg ctt cct gaa 543
 Lys Asp Thr Pro Thr Gln Glu Asp Trp Leu Val Ser Val Leu Pro Glu
 141 146 151 156

gga tcc agg gtt ggt gtg gac ccc ttg atc att cct aca gat tat tgg 591

Gly Ser Arg Val Gly Val Asp Pro Leu Ile Ile Pro Thr Asp Tyr Trp	
157 162 167 172	
aag aaa atg gcc aaa gtt ctg aga agt gcc ggc cat cac ctc att cct	639
Lys Lys Met Ala Lys Val Leu Arg Ser Ala Gly His His Leu Ile Pro	
173 178 183 188	
gtc aag gag aac ctc gtt gac aaa atc tgg aca gac cgt cct gag cgc	687
Val Lys Glu Asn Leu Val Asp Lys Ile Trp Thr Asp Arg Pro Glu Arg	
189 194 199 204	
cct tgc aag cct ctc ctc aca ctg ggc ctg gat tac aca ggc atc tcc	735
Pro Cys Lys Pro Leu Leu Thr Leu Gly Leu Asp Tyr Thr Gly Ile Ser	
205 210 215 220	
tgg aag gac aag gtt gca gac ctt cgg ttg aaa atg gct gag agg aac	783
Trp Lys Asp Lys Val Ala Asp Leu Arg Leu Lys Met Ala Glu Arg Asn	
221 226 231 236	
gtc atg tgg ttt gtg gtc act gcc ttg gat gag att gcg tgg cta ttt	831
Val Met Trp Phe Val Val Thr Ala Leu Asp Glu Ile Ala Trp Leu Phe	
237 242 247 252	
aat ctc cga gga tca gat gtg gag cac aat cca gta ttt ttc tcc tac	879
Asn Leu Arg Gly Ser Asp Val Glu His Asn Pro Val Phe Phe Ser Tyr	
253 258 263 268	
gca atc ata gga cta gag acg atc atg ctc ttc att gat ggt gac cgc	927
Ala Ile Ile Gly Leu Glu Thr Ile Met Leu Phe Ile Asp Gly Asp Arg	
269 274 279 284	
ata gac gcc ccc agt gtg aag gag cac ctg ctt ctt gac ttg ggt ctg	975
Ile Asp Ala Pro Ser Val Lys Glu His Leu Leu Leu Asp Leu Gly Leu	
285 290 295 300	
gaa gcc gaa tac agg atc cag gtg cat ccc tac aag tcc atc ctg agc	1023
Glu Ala Glu Tyr Arg Ile Gln Val His Pro Tyr Lys Ser Ile Leu Ser	
301 306 311 316	
gag ctc aag gcc ctg tgt gct gac ctc tcc cca agg gag aag gtg tgg	1071
Glu Leu Lys Ala Leu Cys Ala Asp Leu Ser Pro Arg Glu Lys Val Trp	
317 322 327 332	
gtc agt gac aag gcc agc tat gct gtg agc gag acc atc ccc aag gac	1119
Val Ser Asp Lys Ala Ser Tyr Ala Val Ser Glu Thr Ile Pro Lys Asp	
333 338 343 348	
cac cgc tgc tgt atg cct tac acc ccc atc tgc atc gcc aaa gct gtg	1167
His Arg Cys Cys Met Pro Tyr Thr Pro Ile Cys Ile Ala Lys Ala Val	
349 354 359 364	
aag aat tca gct gag tca gaa ggc atg agg cgg gct cac att aaa gat	1215
Lys Asn Ser Ala Glu Ser Glu Gly Met Arg Arg Ala His Ile Lys Asp	
365 370 375 380	
gct gtt gct ctc tgt gaa ctc ttt aac tgg ctg gag aaa gag gtt ccc	1263
Ala Val Ala Leu Cys Glu Leu Phe Asn Trp Leu Glu Lys Glu Val Pro	

381	386	391	396	
aaa ggt ggt gtg aca	gag atc tca gct gct	gac aaa gct gag gag ttt	1311	
Lys Gly Gly Val Thr	Glu Ile Ser Ala Ala	Asp Lys Ala Glu Glu Phe		
397	402	407	412	
cgc agg caa cag gca	gac ttt gtg gac ctg	agc ttc cca aca att tcc	1359	
Arg Arg Gln Gln Ala	Asp Phe Val Asp Leu	Ser Phe Pro Thr Ile Ser		
413	418	423	428	
agt acg gga ccc aac	ggc gcc atc att cac	tac gcg cca gtc cct gag	1407	
Ser Thr Gly Pro Asn	Gly Ala Ile Ile His	Tyr Ala Pro Val Pro Glu		
429	434	439	444	
acg aat agg acc ttg	tcc ctg gat gag gtg	tac ctt att gac tcg ggt	1455	
Thr Asn Arg Thr Leu	Ser Leu Asp Glu Val	Tyr Leu Ile Asp Ser Gly		
445	450	455	460	
gct caa tac aag gat	ggc acc aca gat gtg	acg cgg aca atg cat ttt	1503	
Ala Gln Tyr Lys Asp	Gly Thr Thr Asp Val	Thr Arg Thr Met His Phe		
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ggg acc cct aca gcc	tac gag aag gaa tgc	ttc aca tat gtc ctc aag	1551	
Gly Thr Pro Thr Ala	Tyr Glu Lys Glu Cys	Phe Thr Tyr Val Leu Lys		
477	482	487	492	
ggc cac ata gct gtg	agt gca gcc gtt ttc	ccg act gga acc aaa ggt	1599	
Gly His Ile Ala Val	Ser Ala Ala Val Phe	Pro Thr Gly Thr Lys Gly		
493	498	503	508	
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His Leu Leu Asp Ser	Phe Ala Arg Ser Ala	Leu Trp Asp Ser Gly Leu		
509	514	519	524	
gat tac ttg cac ggg	act gga cat ggt gtt	ggg tct ttt ttg aat gtc	1695	
Asp Tyr Leu His Gly	Thr Gly His Gly Val	Gly Ser Phe Leu Asn Val		
525	530	535	540	
cat gag ggt cct tgc	ggc atc agt tac aaa	aca ttc tct gat gag ccc	1743	
His Glu Gly Pro Cys	Gly Ile Ser Tyr Lys	Thr Phe Ser Asp Glu Pro		
541	546	551	556	
ttg gag gca ggc atg	att gtc act gat gag	ccc ggg tac tat gaa gat	1791	
Leu Glu Ala Gly Met	Ile Val Thr Asp Glu	Pro Gly Tyr Tyr Glu Asp		
557	562	567	572	
ggg gct ttt gga att	cgc att gag aat gtt	gtc ctt gtg gtt cct gtg	1839	
Gly Ala Phe Gly Ile	Arg Ile Glu Asn Val	Val Leu Val Val Pro Val		
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Lys Thr Lys Tyr Asn	Phe Asn Asn Arg Gly	Ser Leu Thr Phe Glu Pro		
589	594	599	604	
cta aca ttg gtt cca	att cag acc aaa atg	ata gat gtg gat tct ctt	1935	
Leu Thr Leu Val Pro	Ile Gln Thr Lys Met	Ile Asp Val Asp Ser Leu		
605	610	615	620	

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 Thr Asp Lys Glu Cys Asp Trp Leu Asn Asn Tyr His Leu Thr Cys Arg
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 Glu Trp Leu Ile Arg Glu Thr Gln Pro Ile Ser Lys Gln His *
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 tgtctttaag agtgattgaa gagaataatt caaa atg cct gaa aat cct gct 172
 Met Pro Glu Asn Pro Ala
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aca gat aaa ctg cag gtg ctg cag gta ctt gat cgc ctg aaa atg aaa 220
 Thr Asp Lys Leu Gln Val Leu Gln Val Leu Asp Arg Leu Lys Met Lys
 7 12 17 22

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 Leu Gln Glu Lys Gly Asp Thr Ser Gln Asn Glu Lys Leu Ser Met Phe
 23 28 33 38

tat gag aca cta aag agt cct ctc ttc aac cag ata ctc aca ctt cag 316
 Tyr Glu Thr Leu Lys Ser Pro Leu Phe Asn Gln Ile Leu Thr Leu Gln
 39 44 49 54

cag tcc atc aag caa ctg aag ggt caa ctc aac cat ata ccc tca gat 364
 Gln Ser Ile Lys Gln Leu Lys Gly Gln Leu Asn His Ile Pro Ser Asp
 55 60 65 70

tgt tca gcc aac ttt gat ttt tct agg aaa ggt ttg tta gtg ttc aca	412
Cys Ser Ala Asn Phe Asp Phe Ser Arg Lys Gly Leu Leu Val Phe Thr	
71 76 81 86	
gat ggt tcc att act aat gga aat gtc cac agg ccc tct aat aac tcg	460
Asp Gly Ser Ile Thr Asn Gly Asn Val His Arg Pro Ser Asn Asn Ser	
87 92 97 102	
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Thr Val Ser Gly Leu Phe Pro Trp Thr Pro Lys Leu Gly Asn Glu Asp	
103 108 113 118	
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Phe Asn Ser Val Ile Gln Gln Met Ala Gln Gly Arg Gln Ile Glu Tyr	
119 124 129 134	
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Ile Asp Ile Glu Arg Pro Ser Thr Gly Gly Leu Gly Phe Ser Val Val	
135 140 145 150	
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151 156 161 166	
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Val Gln Pro Gly Ser Val Ala Asp Arg Asp Gln Arg Leu Lys Glu Asn	
167 172 177 182	
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Asp Gln Ile Leu Ala Ile Asn His Thr Pro Leu Asp Gln Asn Ile Ser	
183 188 193 198	
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His Gln Gln Ala Ile Ala Leu Leu Gln Gln Thr Thr Gly Ser Leu Arg	
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Leu Ile Val Ala Arg Glu Pro Val His Thr Lys Ser Ser Thr Ser Ser	
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Ser Leu Asn Asp Thr Thr Leu Pro Glu Thr Val Cys Trp Gly His Val	
231 236 241 246	
gaa gag gtt gag ctc att aat gat ggc tct gga cta ggt ttt gga ata	940
Glu Glu Val Glu Leu Ile Asn Asp Gly Ser Gly Leu Gly Phe Gly Ile	
247 252 257 262	
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Val Gly Gly Lys Thr Ser Gly Val Val Val Arg Thr Ile Val Pro Gly	
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Gly Leu Ala Asp Arg Asp Gly Arg Leu Gln Thr Gly Asp His Ile Leu	
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Lys Ile Gly Gly Thr Asn Val Gln Gly Met Thr Ser Glu Gln Val Ala	
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Gln Val Leu Arg Asn Cys Gly Asn Ser Val Arg Met Leu Val Ala Arg	
311 316 321 326	
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327 332 337 342	
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Pro Val Ala Leu Pro Thr Val Ala Ser Lys Gly Pro Gly Ser Asp Ser	
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Ser Leu Phe Glu Thr Tyr Asn Val Glu Leu Val Arg Lys Asp Gly Gln	
359 364 369 374	
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Ser Leu Gly Ile Arg Ile Val Gly Tyr Val Gly Thr Ser His Thr Gly	
375 380 385 390	
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Glu Ala Ser Gly Ile Tyr Val Lys Ser Ile Ile Pro Gly Ser Ala Ala	
391 396 401 406	
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Tyr His Asn Gly His Ile Gln Val Asn Asp Lys Ile Val Ala Val Asp	
407 412 417 422	
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Gly Val Asn Ile Gln Gly Phe Ala Asn His Asp Val Val Glu Val Leu	
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Arg Asn Ala Gly Gln Val Val His Leu Thr Leu Val Arg Arg Lys Thr	
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Ser Ser Ser Thr Ser Pro Leu Glu Pro Pro Ser Asp Arg Gly Thr Val	
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Val Glu Pro Leu Lys Pro Pro Ala Leu Phe Leu Thr Gly Ala Val Glu	
471 476 481 486	
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Thr Glu Thr Asn Val Asp Gly Glu Asp Glu Glu Ile Lys Glu Arg Ile	
487 492 497 502	
gat act tta aaa aat gac aac ata caa gcc tta gaa aaa ttg gaa aaa	1708
Asp Thr Leu Lys Asn Asp Asn Ile Gln Ala Leu Glu Lys Leu Glu Lys	
503 508 513 518	
gtc cca gac tct cca gaa aat gag ctg aaa tcc aga tgg gaa aac ctg	1756

Val Pro Asp Ser Pro	Glu Asn Glu Leu Lys	Ser Arg Trp Glu Asn Leu	
519	524	529	534
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Leu Gly Pro Asp Tyr	Glu Val Met Val Ala	Thr Leu Asp Thr Gln Ile	
535	540	545	550
gca gat gat gct gag	tta cag aaa tat tca	aag ctg ctg cct att cac	1852
Ala Asp Asp Ala Glu	Leu Gln Lys Tyr Ser	Lys Leu Leu Pro Ile His	
551	556	561	566
act ctg agg ctt ggt	gtg gaa gtg gat tcc	ttt gat ggg cac cat tat	1900
Thr Leu Arg Leu Gly	Val Glu Val Asp Ser	Phe Asp Gly His His Tyr	
567	572	577	582
att tct tca att gtt	tct ggt ggt cct gtt	gat aca ttg ggt ctc cta	1948
Ile Ser Ser Ile Val	Ser Gly Gly Pro Val	Asp Thr Leu Gly Leu Leu	
583	588	593	598
cag cca gaa gat gag	ctg ctt gag gtc aat	ggc atg cag ctt tat gga	1996
Gln Pro Glu Asp Glu	Leu Leu Glu Val Asn	Gly Met Gln Leu Tyr Gly	
599	604	609	614
aaa tct cgc cga gaa	gca gtc tcc ttt ctt	aaa gaa gtg cca ccc cct	2044
Lys Ser Arg Arg Glu	Ala Val Ser Phe Leu	Lys Glu Val Pro Pro Pro	
615	620	625	630
ttt act ttg gtt tgc	tgt cgg agg ttg ttt	gat gat gaa gct tct gta	2092
Phe Thr Leu Val Cys	Cys Arg Arg Leu Phe	Asp Asp Glu Ala Ser Val	
631	636	641	646
gat gaa cca agg cgc	act gaa acc tct ctt	cct gag aca gag gtt gac	2140
Asp Glu Pro Arg Arg	Thr Glu Thr Ser Leu	Pro Glu Thr Glu Val Asp	
647	652	657	662
cac aat atg gat gtc	aat act gaa gaa gat	gat gat ggg gaa tta gca	2188
His Asn Met Asp Val	Asn Thr Glu Glu Asp	Asp Asp Gly Glu Leu Ala	
663	668	673	678
ctg tgg tcc cct gaa	gtc aag att gtt gaa	cta gta aaa gat tgt aaa	2236
Leu Trp Ser Pro Glu	Val Lys Ile Val Glu	Leu Val Lys Asp Cys Lys	
679	684	689	694
ggg ttg gga ttc agc	att ttg gat tac cag	gac cct tta gat cct aca	2284
Gly Leu Gly Phe Ser	Ile Leu Asp Tyr Gln	Asp Pro Leu Asp Pro Thr	
695	700	705	710
aga tca gtg att gtg	atc cgc tcc ctg gta	gca gat ggt gta gca gaa	2332
Arg Ser Val Ile Val	Ile Arg Ser Leu Val	Ala Asp Gly Val Ala Glu	
711	716	721	726
aga agt ggg gga cta	tta cct gga gac cgc	ctg gtc tca gtc aat gaa	2380
Arg Ser Gly Gly Leu	Leu Pro Gly Asp Arg	Leu Val Ser Val Asn Glu	
727	732	737	742
tac cgt ttg gac aac	acc tca ctt gct gaa	gct gtg gaa ata ttg aaa	2428
Tyr Arg Leu Asp Asn	Thr Ser Leu Ala Glu	Ala Val Glu Ile Leu Lys	

743	748	753	758	
gct gtg cca cca ggc	cta gta cac ctt ggc	atc tgt aag cct ttg gtg		2476
Ala Val Pro Pro Gly	Leu Val His Leu Gly	Ile Cys Lys Pro Leu Val		
759	764	769	774	
gaa gat aat gaa gaa	gaa agt tgt tat att	tta cat tca agc agt aat		2524
Glu Asp Asn Glu Glu	Glu Ser Cys Tyr Ile	Leu His Ser Ser Ser Asn		
775	780	785	790	
gaa gac aag act gaa	ttt tca gga aca att	cat gat ata aat tca tct		2572
Glu Asp Lys Thr Glu	Phe Ser Gly Thr Ile	His Asp Ile Asn Ser Ser		
791	796	801	806	
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Leu Ile Leu Glu Ala	Pro Lys Gly Phe Arg	Asp Glu Pro Tyr Phe Lys		
807	812	817	822	
gaa gaa ctt gtg gat	gaa cca ttt cta gat	ctg gga aag tct ttc cat		2668
Glu Glu Leu Val Asp	Glu Pro Phe Leu Asp	Leu Gly Lys Ser Phe His		
823	828	833	838	
tcc caa caa aaa gag	ata gag caa agc aag	gag gcc tgg gag atg cat		2716
Ser Gln Gln Lys Glu	Ile Glu Gln Ser Lys	Glu Ala Trp Glu Met His		
839	844	849	854	
gaa ttt ctg act cct	aga ttg cag gaa atg	gat gaa gaa aga gaa atg		2764
Glu Phe Leu Thr Pro	Arg Leu Gln Glu Met	Asp Glu Glu Arg Glu Met		
855	860	865	870	
ctt gtt gat gaa gaa	tat gag tta tat caa	gat ccc tca cca tcc atg		2812
Leu Val Asp Glu Glu	Tyr Glu Leu Tyr Gln	Asp Pro Ser Pro Ser Met		
871	876	881	886	
gag ttg tat ccc ttg	tcg cac att caa gag	gcc act cct gtg ccc tct		2860
Glu Leu Tyr Pro Leu	Ser His Ile Gln Glu	Ala Thr Pro Val Pro Ser		
887	892	897	902	
gtg aat gaa ctt cac	ttt ggt aca cag tgg	ttg cat gat aat gaa cca		2908
Val Asn Glu Leu His	Phe Gly Thr Gln Trp	Leu His Asp Asn Glu Pro		
903	908	913	918	
tcc gag tct caa gag	gca aga acc ggg agg	act gtc tat tcc cag gag		2956
Ser Glu Ser Gln Glu	Ala Arg Thr Gly Arg	Thr Val Tyr Ser Gln Glu		
919	924	929	934	
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Ala Gln Pro Tyr Gly	Tyr Cys Pro Glu Asn	Val Met Lys Glu Asn Phe		
935	940	945	950	
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Val Met Glu Ser Leu	Pro Ser Val Pro Ser	Thr Glu Gly Asn Ser Gln		
951	956	961	966	
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Gln Gly Arg Phe Asp	Asp Leu Glu Asn Leu	Asn Ser Leu Ala Lys Thr		
967	972	977	982	

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Ser Leu Asp Leu Gly Met Ile Pro Asn Asp Val Gln Gly Pro Ser Leu	
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Pro Leu Tyr Gln His Gln Ala Thr Arg Val Ile Ser Lys Ala Ser Ala	
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Tyr Thr Gly Met Leu Ser Ser Arg Tyr Ala Thr Asp Thr Cys Glu Leu	
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Leu Ser Ser Thr Pro Arg Val Ile Pro Asn Val His Asn Lys Ala Asn	
1159 1164 1169 1174	
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Lys Ile Thr Gly Asn Gln Asn Gln Asp Thr Gln Glu Lys Lys Glu Lys	
1175 1180 1185 1190	
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Arg Gln Gly Thr Ala Pro Pro Pro Met Lys Leu Pro Pro Pro Tyr Lys	
1191 1196 1201 1206	

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Ala Leu Thr Asp Asp Ser Asp Glu Asn Glu Glu Glu Asp Ala Phe Thr	
1207 1212 1217 1222	
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Asp Gln Lys Ile Arg Gln Arg Tyr Ala Asp Leu Pro Gly Glu Leu His	
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Ile Ile Glu Leu Glu Lys Asp Lys Asn Gly Leu Gly Leu Ser Leu Ala	
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Gly Asn Lys Asp Arg Ser Arg Met Ser Ile Phe Val Val Gly Ile Asn	
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Pro Glu Gly Pro Ala Ala Asp Gly Arg Met Arg Ile Gly Asp Glu	
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Val	Ile	His	Glu	Val	Tyr	Glu	Glu	Gly	Ala	Ala	Ala	Arg	Asp	Gly	Arg	
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ctt	tgg	gct	ggt	gac	cag	ata	tta	gag	gtt	aat	ggg	gtt	gac	ctg	agg	4636
Leu	Trp	Ala	Gly	Asp	Gln	Ile	Leu	Glu	Val	Asn	Gly	Val	Asp	Leu	Arg	
1479					1484					1489					1494	
aac	tcc	agc	cac	gaa	gaa	gcc	atc	aca	gcc	ctg	agg	cag	acc	ccc	cag	4684
Asn	Ser	Ser	His	Glu	Glu	Ala	Ile	Thr	Ala	Leu	Arg	Gln	Thr	Pro	Gln	
1495					1500					1505					1510	
aag	gtg	cgg	ctg	gtg	gtg	tat	aga	gat	gag	gca	cac	tac	cgg	gat	gag	4732
Lys	Val	Arg	Leu	Val	Val	Tyr	Arg	Asp	Glu	Ala	His	Tyr	Arg	Asp	Glu	
1511					1516					1521					1526	
gag	aac	ttg	gag	att	ttc	cct	gtg	gat	ctg	cag	aag	aaa	gct	ggc	cgg	4780
Glu	Asn	Leu	Glu	Ile	Phe	Pro	Val	Asp	Leu	Gln	Lys	Lys	Ala	Gly	Arg	
1527					1532					1537					1542	
ggc	ctg	ggc	ctg	agc	atc	gtt	ggg	aaa	cgg	taa						4813
Gly	Leu	Gly	Leu	Ser	Ile	Val	Gly	Lys	Arg	*						
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tcagagacta ttacagacga ttgctgtact cgaggctcag cgttctcaag cagtccaaga	180
ccttgaaagt ttaggcaggc accagagaga agcactgaaa aatcccattg gatttgtgga	240
aaaactccag aagaaggctg atattgggct tccatatcca cagagagttg ttcaattgcc	300
tgagatcgta tgggaccaat atacccatag ccttggggaat ttgaaagag aatttataaa	360

tcgtaaaaga catactagaa gagttaagct agttttttgat aaagtagggtt tacctgctag 420

accaaaaaagt ccttttagatc ctaagaagga tggagagtcct ctttcatatt ct atg 475
Met
1

ttg cct ttg agt gat ggt cca gaa ggc tca agc agt cgt cct cag atg 523
Leu Pro Leu Ser Asp Gly Pro Glu Gly Ser Ser Arg Pro Gln Met
2 7 12 17

ata aga gga cgc ttg tgt gat gat acc aaa cct gaa aca ttt aac cag 571
Ile Arg Gly Arg Leu Cys Asp Asp Thr Lys Pro Glu Thr Phe Asn Gln
18 23 28 33

ttg tgg act gtt gaa gaa cag aaa aag ctg gaa cag cta ctc atc aaa 619
Leu Trp Thr Val Glu Glu Gln Lys Lys Leu Glu Gln Leu Leu Ile Lys
34 39 44 49

tac cct cct gaa gaa gta gaa tct cga cgc tgg cag aag ata gca gat 667
Tyr Pro Pro Glu Glu Val Glu Ser Arg Arg Trp Gln Lys Ile Ala Asp
50 55 60 65

gaa ttg ggc aac agg aca gca aaa cag gtt gcc agc cga gta cag aag 715
Glu Leu Gly Asn Arg Thr Ala Lys Gln Val Ala Ser Arg Val Gln Lys
66 71 76 81

tat ttc ata aag cta act aaa gct ggc att cca gta cca ggc aga aca 763
Tyr Phe Ile Lys Leu Thr Lys Ala Gly Ile Pro Val Pro Gly Arg Thr
82 87 92 97

cca aac tta tat ata tac tcc aaa aag tct tca aca agc aga cga cag 811
Pro Asn Leu Tyr Ile Tyr Ser Lys Lys Ser Ser Thr Ser Arg Arg Gln
98 103 108 113

cac cct ctt aat aag cat ctc ttt aag cct tcc act ttc atg act tca 859
His Pro Leu Asn Lys His Leu Phe Lys Pro Ser Thr Phe Met Thr Ser
114 119 124 129

cat gaa ccg cca gtg tat atg gat gaa gat gat gac cga tct tgt ttt 907
His Glu Pro Pro Val Tyr Met Asp Glu Asp Asp Asp Arg Ser Cys Phe
130 135 140 145

cat agc cac atg aac act gct gtt gaa gat gca tca gat gac gaa agt 955
His Ser His Met Asn Thr Ala Val Glu Asp Ala Ser Asp Asp Glu Ser
146 151 156 161

att cct atc atg tat agg aat tta cct gaa tat aaa gaa cta tta cag 1003
Ile Pro Ile Met Tyr Arg Asn Leu Pro Glu Tyr Lys Glu Leu Leu Gln
162 167 172 177

ttt aaa aag tta aag aag cag aaa ctt cag caa atg caa gct gaa agt 1051
Phe Lys Lys Leu Lys Lys Gln Lys Leu Gln Gln Met Gln Ala Glu Ser
178 183 188 193

gga ttt gtg caa cat gtg ggc ttt aag tgt gat aac tgt ggc ata gaa 1099
Gly Phe Val Gln His Val Gly Phe Lys Cys Asp Asn Cys Gly Ile Glu
194 199 204 209

ccc atc cag ggt gtt cgg tgg cat tgc cag gat tgt cct cca gaa atg	1147
Pro Ile Gln Gly Val Arg Trp His Cys Gln Asp Cys Pro Pro Glu Met	
210 215 220 225	
tct ttg gat ttc tgt gat tct tgt tca gac tgt cta cat gaa aca gat	1195
Ser Leu Asp Phe Cys Asp Ser Cys Ser Asp Cys Leu His Glu Thr Asp	
226 231 236 241	
att cac aag gaa gat cac caa tta gaa cct att tat agg tca gag aca	1243
Ile His Lys Glu Asp His Gln Leu Glu Pro Ile Tyr Arg Ser Glu Thr	
242 247 252 257	
ttc tta gac aga gac tac tgt gtg tct cag ggc acc agt tac aat tac	1291
Phe Leu Asp Arg Asp Tyr Cys Val Ser Gln Gly Thr Ser Tyr Asn Tyr	
258 263 268 273	
ctt gac cca aac tac ttt cca gca aac aga tga catggaag agaacatcat	1342
Leu Asp Pro Asn Tyr Phe Pro Ala Asn Arg *	
274 279 284	
ttactagtcc tcttcaacac atagcaatgg tatcattggt aattatgtgc acagtttgga	1402
aagattctct gctttccag aaatgacact cacagcatga gagcttctg agtgttctcg	1462
tcaagtacag ctctgcaccg ttgtggctct agatcactgt tcagcagctg aacatttctg	1522
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tcattgatgg ctttagtaa attggagctg cttaatcata ttgatattca atttctttta	1882
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tgcttctta accagctcat ggtgtgtgaa tgttataaaa ttgtcactca gatataattt	2002
ttaaatgtaa tgttatataa gatgatcatg tgatgtgtac aaactatggg gaaaagtgcc	2062
agtggtagta actgtgtaaa gtttctaatt cacaacatta attcctttaa aatacacagc	2122
cttctgcctc tgtatttggg gttgtcagta caactcatca aagaaaactg cctaataata	2182
aatcatata tatggtaata atttccctct tttgtagtct gcacaagatc cataaaagat	2242
tgtattttta ttactattta aacaagtgat taaatttagt ctgcacagtg agcaagggtt	2302
cacatgcatt cttttatact gctggatttt gttgtgcac atttaaaaca ttttgtatgt	2362
ttcttcttat ctgtgtatac agtatgttct tgaatgatgt tcatttgtca ggagaactgt	2422

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2470

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tcagagacta ttacagacga ttgctgtact cgaggctcag cgttctcaag cagtccaaga 180
ccttgaaaagt ttaggcaggc accagagaga agcactgaaa aatoccattg gatttgtgga 240
aaaactccag aagaaggctg atattgggct tccatatcca cagagagttg ttcaattgcc 300
tgagatcgta tgggaccaat atacccatag ccttggaat tttgaaagag aatttaaaaa 360
tcgtaaaaaga catactagaa gagttaagct agtttttgat aaagtaggtt tacctgctag 420
acaaaaaagt ccttttagatc ctaagaagga tggagagtcc ctttcatatt ct atg 475
Met
1
ttg cct ttg agt gat ggt cca gaa ggc tca agc agt cgt cct cag atg 523
Leu Pro Leu Ser Asp Gly Pro Glu Gly Ser Ser Ser Arg Pro Gln Met
2 7 12 17
ata aga gga cgc ttg tgt gat gat acc aaa cct gaa aca ttt aac cag 571
Ile Arg Gly Arg Leu Cys Asp Asp Thr Lys Pro Glu Thr Phe Asn Gln
18 23 28 33
ttg tgg act gtt gaa gaa cag aaa aag ctg gaa cag cta ctc atc aaa 619
Leu Trp Thr Val Glu Glu Gln Lys Lys Leu Glu Gln Leu Leu Ile Lys
34 39 44 49
tac cct cct gaa gaa gta gaa tct cga cgc tgg cag aag ata gca gat 667
Tyr Pro Pro Glu Glu Val Glu Ser Arg Arg Trp Gln Lys Ile Ala Asp
50 55 60 65
gaa ttg ggc aac agg aca gca aaa cag tct tca aca agc aga cga cag 715
Glu Leu Gly Asn Arg Thr Ala Lys Gln Ser Ser Thr Ser Arg Arg Gln
66 71 76 81
cac cct ctt aat aag cat ctc ttt aag cct tcc act ttc atg act tca 763
His Pro Leu Asn Lys His Leu Phe Lys Pro Ser Thr Phe Met Thr Ser
82 87 92 97

cat gaa ccg cca gtg tat atg gat gaa gat gat gac cga tct tgt ttt	811
His Glu Pro Pro Val Tyr Met Asp Glu Asp Asp Asp Arg Ser Cys Phe	
98 103 108 113	
cat agc cac atg aac act gct gtt gaa gat gca tca gat gac gaa agt	859
His Ser His Met Asn Thr Ala Val Glu Asp Ala Ser Asp Asp Glu Ser	
114 119 124 129	
att cct atc atg tat agg aat tta cct gaa tat aaa gaa cta tta cag	907
Ile Pro Ile Met Tyr Arg Asn Leu Pro Glu Tyr Lys Glu Leu Leu Gln	
130 135 140 145	
ttt aaa aag tta aag aag cag aaa ctt cag caa atg caa gct gaa agt	955
Phe Lys Lys Leu Lys Lys Gln Lys Leu Gln Gln Met Gln Ala Glu Ser	
146 151 156 161	
gga ttt gtg caa cat gtg ggc ttt aag tgt gat aac tgt ggc ata gaa	1003
Gly Phe Val Gln His Val Gly Phe Lys Cys Asp Asn Cys Gly Ile Glu	
162 167 172 177	
ccc atc cag ggt gtt cgg tgg cat tgc cag gat tgt cct cca gaa atg	1051
Pro Ile Gln Gly Val Arg Trp His Cys Gln Asp Cys Pro Pro Glu Met	
178 183 188 193	
tct ttg gat ttc tgt gat tct tgt tca gac tgt cta cat gaa aca gat	1099
Ser Leu Asp Phe Cys Asp Ser Cys Ser Asp Cys Leu His Glu Thr Asp	
194 199 204 209	
att cac aag gaa gat cac caa tta gaa cct att tat agg tca gag aca	1147
Ile His Lys Glu Asp His Gln Leu Glu Pro Ile Tyr Arg Ser Glu Thr	
210 215 220 225	
ttc tta gac aga gac tac tgt gtg tct cag ggc acc agt tac aat tac	1195
Phe Leu Asp Arg Asp Tyr Cys Val Ser Gln Gly Thr Ser Tyr Asn Tyr	
226 231 236 241	
ctt gac cca aac tac ttt cca gca aac aga tga catggaag agaacatcat	1246
Leu Asp Pro Asn Tyr Phe Pro Ala Asn Arg *	
242 247 252	
ttactagtcc ttttcaacac atagcaatgg tatcattgtt aattatgtgc acagtttggg	1306
aagattctct gctttccag aaatgacact cacagcatga gagcttcttg agtgttctcg	1366
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 agtggtagta actgtgtaaa gtttctaatt cacaacatta attcctttta aatacacagc 2026
 cttctgcttc tgtatttgga gttgtcagta caactcatca aagaaaaactg cctaataataa 2086
 aaatcatata tatggtaata atttcctct tttgtagtct gcacaagatc cataaaagat 2146
 tgtattttta ttactattta aacaagtgat taaatttagt ctgcacagtg agcaagggtt 2206
 cacatgcatt cttttatact gctggatttt gttgtgcac attttaaaca ttttgtatgt 2266
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 tac acg tat cct gaa aac tgg agg gcc ttc aag gct ctc atc gct gct 96
 Tyr Thr Tyr Pro Glu Asn Trp Arg Ala Phe Lys Ala Leu Ile Ala Ala
 13 18 23 28
 cag tac agc ggg gct cat gtc cgc gtg ctc tcc gca cca ccc cac ttc 144
 Gln Tyr Ser Gly Ala His Val Arg Val Leu Ser Ala Pro Pro His Phe
 29 34 39 44
 cat ttt ggc caa acc aac cgc acc cct gaa ttt ctc cgc aaa ttt cct 192
 His Phe Gly Gln Thr Asn Arg Thr Pro Glu Phe Leu Arg Lys Phe Pro
 45 50 55 60
 gcc ggc aag gtc cca gca ttt gag ggt gat gat gga ttc tgt gtg ttt 240
 Ala Gly Lys Val Pro Ala Phe Glu Gly Asp Asp Gly Phe Cys Val Phe
 61 66 71 76
 gag agc aac gcc att gcc tac tat gtg agc aat gag gag ctg cgg gga 288
 Glu Ser Asn Ala Ile Ala Tyr Tyr Val Ser Asn Glu Glu Leu Arg Gly
 77 82 87 92

agt act cca gag gca gca gcc cag gtg gtg cag tgg gtg agc ttt gct	336
Ser Thr Pro Glu Ala Ala Ala Gln Val Val Gln Trp Val Ser Phe Ala	
93 98 103 108	
gat tcc gat ata gtg ccc cca gcc agt acc tgg gtg ttc ccc acc ttg	384
Asp Ser Asp Ile Val Pro Pro Ala Ser Thr Trp Val Phe Pro Thr Leu	
109 114 119 124	
ggc atc atg cac cac aac aaa cag gcc act gag aat gca aag gag gaa	432
Gly Ile Met His His Asn Lys Gln Ala Thr Glu Asn Ala Lys Glu Glu	
125 130 135 140	
gtg agg cga att ctg ggg ctg ctg gat gct tac ttg aag acg agg act	480
Val Arg Arg Ile Leu Gly Leu Leu Asp Ala Tyr Leu Lys Thr Arg Thr	
141 146 151 156	
ttt ctg gtg ggc gaa cga gtg aca ttg gct gac atc aca gtt gtc tgc	528
Phe Leu Val Gly Glu Arg Val Thr Leu Ala Asp Ile Thr Val Val Cys	
157 162 167 172	
acc ctg ttg tgg ctc tat aag cag gtt cta gag cct tct ttc cgc cag	576
Thr Leu Leu Trp Leu Tyr Lys Gln Val Leu Glu Pro Ser Phe Arg Gln	
173 178 183 188	
gcc ttt ccc aat acc aac cgc tgg ttc ctc acc tgc att aac cag ccc	624
Ala Phe Pro Asn Thr Asn Arg Trp Phe Leu Thr Cys Ile Asn Gln Pro	
189 194 199 204	
cag ttc cgg gct gtc ttg ggc gaa gtg aaa ctg tgt gag aag atg gcc	672
Gln Phe Arg Ala Val Leu Gly Glu Val Lys Leu Cys Glu Lys Met Ala	
205 210 215 220	
cag ttt gat gct aaa aag ttt gca gag acc caa cct aaa aag gac aca	720
Gln Phe Asp Ala Lys Lys Phe Ala Glu Thr Gln Pro Lys Lys Asp Thr	
221 226 231 236	
cca cgg aaa gag aag ggt tca cgg gaa gag aag cag aag ccc cag gct	768
Pro Arg Lys Glu Lys Gly Ser Arg Glu Glu Lys Gln Lys Pro Gln Ala	
237 242 247 252	
gag cgg aag gag gag aaa aag gcg gct gcc cct gct cct gag gag gag	816
Glu Arg Lys Glu Glu Lys Lys Ala Ala Ala Pro Ala Pro Glu Glu Glu	
253 258 263 268	
atg gat gaa tgt gag cag gcg ctg gct gct gag ccc aag gcc aag gac	864
Met Asp Glu Cys Glu Gln Ala Leu Ala Ala Glu Pro Lys Ala Lys Asp	
269 274 279 284	
ccc ttc gct cac ctg ccc aag agt acc ttt gtg ttg gat gaa ttt aag	912
Pro Phe Ala His Leu Pro Lys Ser Thr Phe Val Leu Asp Glu Phe Lys	
285 290 295 300	
cgc aag tac tcc aat gag gac aca ctc tct gtg gca ctg cca tat ttc	960
Arg Lys Tyr Ser Asn Glu Asp Thr Leu Ser Val Ala Leu Pro Tyr Phe	
301 306 311 316	

tgg gag cac ttt gat aag gac ggc tgg tcc ctg tgg tac tca gag tat	1008
Trp Glu His Phe Asp Lys Asp Gly Trp Ser Leu Trp Tyr Ser Glu Tyr	
317 322 327 332	
cgc ttc cct gaa gaa ctc act cag acc ttc atg agc tgc aat ctc atc	1056
Arg Phe Pro Glu Glu Leu Thr Gln Thr Phe Met Ser Cys Asn Leu Ile	
333 338 343 348	
act gga atg ttc cag cga ctg gac aag ctg agg aag aat gcc ttc gcc	1104
Thr Gly Met Phe Gln Arg Leu Asp Lys Leu Arg Lys Asn Ala Phe Ala	
349 354 359 364	
agt gtc atc ctt ttt gga acc aac aat agc agc tcc att tct gga gtc	1152
Ser Val Ile Leu Phe Gly Thr Asn Asn Ser Ser Ser Ile Ser Gly Val	
365 370 375 380	
tgg gtc ttc cga ggc cag gag ctt gcc ttt ccg ctg agt cca gat tgg	1200
Trp Val Phe Arg Gly Gln Glu Leu Ala Phe Pro Leu Ser Pro Asp Trp	
381 386 391 396	
cag gtg gac tac gag tca tac aca tgg cgg aaa ctg gat cct ggc agc	1248
Gln Val Asp Tyr Glu Ser Tyr Thr Trp Arg Lys Leu Asp Pro Gly Ser	
397 402 407 412	
gag gag acc cag acg ctg gtt cga gag tac ttt tcc tgg gag ggg gcc	1296
Glu Glu Thr Gln Thr Leu Val Arg Glu Tyr Phe Ser Trp Glu Gly Ala	
413 418 423 428	
ttc cag cat gtg gca aag cct tca atc agg gca aga tct tca agt gaa	1344
Phe Gln His Val Ala Lys Pro Ser Ile Arg Ala Arg Ser Ser Ser Glu	
429 434 439 444	
cat ctc ttg cca tca cct agc tgc ctg cac ctg ccc ttc agg gag atg	1392
His Leu Leu Pro Ser Pro Ser Cys Leu His Leu Pro Phe Arg Glu Met	
445 450 455 460	
ggg gtc att aaa gga aac tga acattgaaaa aaaaaaaaaa	1432
Gly Val Ile Lys Gly Asn *	
461 466	

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taggataata tctaggcatt ttgcgaagtt taaccacccg ggtaccgccg ttcttgtcac 180

caccaactgg ttttgtaaca gttgcgagaa ccttctcctt ctttttcttt ccaacttgga 240

cgctgcaga atg gct ccc gca aag aag ggt ggc gag aag aaa aag ggc 288
Met Ala Pro Ala Lys Lys Gly Gly Glu Lys Lys Lys Gly
1 5 10

cgt tct gcc atc aac gaa gtg gta acc cga gaa tac acc atc aac att 336
Arg Ser Ala Ile Asn Glu Val Val Thr Arg Glu Tyr Thr Ile Asn Ile
14 19 24 29

cac aag cgc atc cat gga gtg ggc ttc aag aag cgt gca cct cgg gca 384
His Lys Arg Ile His Gly Val Gly Phe Lys Lys Arg Ala Pro Arg Ala
30 35 40 45

ctc aaa gag att cgg aaa ttt gcc atg aag gag atg gga act cca gat 432
Leu Lys Glu Ile Arg Lys Phe Ala Met Lys Glu Met Gly Thr Pro Asp
46 51 56 61

gtg cgc att gac acc agg ctc aac aaa gct gtc tgg gcc aaa gga ata 480
Val Arg Ile Asp Thr Arg Leu Asn Lys Ala Val Trp Ala Lys Gly Ile
62 67 72 77

agg aat gtg cca tac cga atc cgt gtg cgg ctg tcc aga aaa cgt aat 528
Arg Asn Val Pro Tyr Arg Ile Arg Val Arg Leu Ser Arg Lys Arg Asn
78 83 88 93

gag gat gaa gat tca cca aat aag cta tat act ttg gtt acc tat gta 576
Glu Asp Glu Asp Ser Pro Asn Lys Leu Tyr Thr Leu Val Thr Tyr Val
94 99 104 109

cct gtt acc act ttc aaa aat cta cag aca gtc aat gtg gat gag aac 624
Pro Val Thr Thr Phe Lys Asn Leu Gln Thr Val Asn Val Asp Glu Asn
110 115 120 125

taa tcgc tgatcgtcag atcaaataaa gttataaaat tgccttcattg tttttgttct 681
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126

ttttagtgc aacataatgt acttgtatac cctatcctaa ttatgggatc atttgaagag 741

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51

99

147

195

243

291

339

387

435

483

531

579

627

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184 189 194 199	
gag cca gga gct gtg ggc cca aaa gga cct cct gga gta gac ggt gtg	675
Glu Pro Gly Ala Val Gly Pro Lys Gly Pro Pro Gly Val Asp Gly Val	
200 205 210 215	
gga gtc cca ggg gca gca ggg ttg cca gga cca cag ggc cca tca ggg	723
Gly Val Pro Gly Ala Ala Gly Leu Pro Gly Pro Gln Gly Pro Ser Gly	
216 221 226 231	
gcc aaa ggg gag cca gga acc cgg ggc ccc cct ggg ctg ata ggc ccc	771
Ala Lys Gly Glu Pro Gly Thr Arg Gly Pro Pro Gly Leu Ile Gly Pro	
232 237 242 247	
act ggc tat ggg atg cca gga ctg cca ggc ccc aag ggg gac agg ggc	819
Thr Gly Tyr Gly Met Pro Gly Leu Pro Gly Pro Lys Gly Asp Arg Gly	
248 253 258 263	
cca gct ggg gtc cca gga ctc ttg ggg gac agg ggt gag cca ggg gag	867
Pro Ala Gly Val Pro Gly Leu Leu Gly Asp Arg Gly Glu Pro Gly Glu	
264 269 274 279	
gat ggg gag cca ggg gag cag ggc cca cag ggt ctt ggg ggt ccc cct	915
Asp Gly Glu Pro Gly Glu Gln Gly Pro Gln Gly Leu Gly Gly Pro Pro	
280 285 290 295	
ggg ctt cct ggg tct gca ggg ctt cct ggc aga cgt ggg ccc cct ggg	963
Gly Leu Pro Gly Ser Ala Gly Leu Pro Gly Arg Arg Gly Pro Pro Gly	
296 301 306 311	
cct aag ggt gag gca ggg cct gga gga ccc cca gga gtg cct ggc att	1011
Pro Lys Gly Glu Ala Gly Pro Gly Gly Pro Pro Gly Val Pro Gly Ile	
312 317 322 327	
cga ggt gac cag ggg cct agt ggg ctg gct ggg aaa cca ggg gtc cca	1059
Arg Gly Asp Gln Gly Pro Ser Gly Leu Ala Gly Lys Pro Gly Val Pro	
328 333 338 343	
ggt gag agg gga ctt cct ggg gcc cat gga ccc cct gga cca act ggg	1107
Gly Glu Arg Gly Leu Pro Gly Ala His Gly Pro Pro Gly Pro Thr Gly	
344 349 354 359	
ccc aag ggt gag ccg ggt ttc acg ggt cgc cct gga gga cca ggg gtg	1155
Pro Lys Gly Glu Pro Gly Phe Thr Gly Arg Pro Gly Gly Pro Gly Val	
360 365 370 375	
gca gga gcc ctg ggg cag aaa ggt gac ttg ggg ctc cct ggg cag cct	1203
Ala Gly Ala Leu Gly Gln Lys Gly Asp Leu Gly Leu Pro Gly Gln Pro	
376 381 386 391	
ggc ctg agg ggt ccc tca gga atc cca gga ctc cag ggt cca gct ggc	1251
Gly Leu Arg Gly Pro Ser Gly Ile Pro Gly Leu Gln Gly Pro Ala Gly	
392 397 402 407	
cct att ggc ccc caa ggc ctg ccg ggc ctg aag ggg gaa cca ggc ctg	1299
Pro Ile Gly Pro Gln Gly Leu Pro Gly Leu Lys Gly Glu Pro Gly Leu	

408	413	418	423
cca ggg ccc cct gga gag ggg aga gca ggg gaa cct ggc acg gct ggc Pro Gly Pro Pro Gly Glu Gly Arg Ala Gly Glu Pro Gly Thr Ala Gly 424 429 434 439			1347
cca cgg ggg ccc cca ggg gtc cct ggc tcc cct gga atc acg ggg cct Pro Arg Gly Pro Pro Gly Val Pro Gly Ser Pro Gly Ile Thr Gly Pro 440 445 450 455			1395
ccg ggg ctc ccg gga ccc cct ggt gcc cct ggg gcc ttc gat gag act Pro Gly Leu Pro Gly Pro Pro Gly Ala Pro Gly Ala Phe Asp Glu Thr 456 461 466 471			1443
ggc atc gca ggc ttg cac ctg ccc aac ggc ggt gtg gag ggt gcc gtg Gly Ile Ala Gly Leu His Leu Pro Asn Gly Gly Val Glu Gly Ala Val 472 477 482 487			1491
ctg ggc aag ggg ggc aag cca cag ttt ggg ctg ggc gag ctg tct gcc Leu Gly Lys Gly Gly Lys Pro Gln Phe Gly Leu Gly Glu Leu Ser Ala 488 493 498 503			1539
cat gcc aca ccg gcc ttc act gcg gtg ctc acc tcg ccc tta ccc gcc His Ala Thr Pro Ala Phe Thr Ala Val Leu Thr Ser Pro Leu Pro Ala 504 509 514 519			1587
tcg ggc atg ccc gtg aaa ttt gac cgg act ctc tac aat ggc cac agc Ser Gly Met Pro Val Lys Phe Asp Arg Thr Leu Tyr Asn Gly His Ser 520 525 530 535			1635
ggc tac aac cca gcc act ggc atc ttc acc tgc cct gtg ggc ggc gtc Gly Tyr Asn Pro Ala Thr Gly Ile Phe Thr Cys Pro Val Gly Gly Val 536 541 546 551			1683
tac tac ttt gct tac cat gtg cac gtc aag ggc acc aac gtg tgg gtg Tyr Tyr Phe Ala Tyr His Val His Val Lys Gly Thr Asn Val Trp Val 552 557 562 567			1731
gcc ctg tac aag aac aac gtg ccg gcc acc tat acc tac gat gag tac Ala Leu Tyr Lys Asn Asn Val Pro Ala Thr Tyr Thr Tyr Asp Glu Tyr 568 573 578 583			1779
aag aag ggc tac ctg gac cag gca tct ggt ggg gcc gtg ctc cag ctg Lys Lys Gly Tyr Leu Asp Gln Ala Ser Gly Gly Ala Val Leu Gln Leu 584 589 594 599			1827
cgg ccc aac gac cag gtc tgg gtg cag atg ccg tcg gac cag gcc aac Arg Pro Asn Asp Gln Val Trp Val Gln Met Pro Ser Asp Gln Ala Asn 600 605 610 615			1875
ggc ctc tac tcc acg gag tac atc cac tcc tcc ttt tca gga ttc ttg Gly Leu Tyr Ser Thr Glu Tyr Ile His Ser Ser Phe Ser Gly Phe Leu 616 621 626 631			1923
ctc tgc ccc aca taa cccgcggggg gtgtcctgct gccctggcct cctcccccttt Leu Cys Pro Thr *			1978

agtggtagag cgaccttttc aattacaaag aacctcctgg aaaaaaaaaac aaaagctgaa 2038
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 gagattgttt ctggaagggg ctggcctgag tttctttccc ccaaagtct gtgcagtgtc 2158
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 gggaccagga gcgaaccatg atgccaggta ggaggggctg actgggcccct gcgagcgcgt 240
 gcctttcctg ctgggcagag gccctccaca tggggccacg cggggccggc acaggagggc 300
 agtcagatgg gcagggcctg agagcctccc tctctcctt aggtccctaa tc atg 355
 Met
 1
 gac tcc cca aga gct ggc acc cac cag ggc ccc ctc gat gca gag aca 403
 Asp Ser Pro Arg Ala Gly Thr His Gln Gly Pro Leu Asp Ala Glu Thr
 2 7 12 17
 gag gtc ggt gct gac cgc tgc acg tgc act gcc tac cag gag cag agg 451
 Glu Val Gly Ala Asp Arg Cys Thr Ser Thr Ala Tyr Gln Glu Gln Arg
 18 23 28 33
 ccc cag gtg gag caa gtt ggc aaa cag gct cct ctc tcc cca ggg ctg 499
 Pro Gln Val Glu Gln Val Gly Lys Gln Ala Pro Leu Ser Pro Gly Leu
 34 39 44 49
 ccg gca atg ggg ggg cct ggc ccc ggc ccc tgt gag gac ccc gcg ggt 547
 Pro Ala Met Gly Gly Pro Gly Pro Gly Pro Cys Glu Asp Pro Ala Gly
 50 55 60 65
 gct ggg gga gca ggt gca ggg ggc tcc gag ccc ctg gtg act gtc acc 595

Ala Gly Gly Ala Gly Ala Gly Gly Ser Glu Pro Leu Val Thr Val Thr	
66 71 76 81	
gtg cag tgc gcc ttc aca gtg gcc ctg agg gca cga aga gga gcc gac	643
Val Gln Cys Ala Phe Thr Val Ala Leu Arg Ala Arg Arg Gly Ala Asp	
82 87 92 97	
ctg tcc agc ctg cgg gca ctg ctg ggc caa gcc ctc cct cac cag gcc	691
Leu Ser Ser Leu Arg Ala Leu Leu Gly Gln Ala Leu Pro His Gln Ala	
98 103 108 113	
cag ctt ggg caa ctc agt tac cta gcc cca ggt gag gac ggg cac tgg	739
Gln Leu Gly Gln Leu Ser Tyr Leu Ala Pro Gly Glu Asp Gly His Trp	
114 119 124 129	
gtc ccc atc ccc gag gag gag tcg ctg cag agg gcc tgg cag gac gca	787
Val Pro Ile Pro Glu Glu Glu Ser Leu Gln Arg Ala Trp Gln Asp Ala	
130 135 140 145	
gct gcc tgc ccc agg ggg ctg cag ctg cag tgc agg gga gcc ggg ggt	835
Ala Ala Cys Pro Arg Gly Leu Gln Leu Gln Cys Arg Gly Ala Gly Gly	
146 151 156 161	
cgg ccg gtc ctc tac cag gtg gtg gcc cag cac agc tac tcc gcc cag	883
Arg Pro Val Leu Tyr Gln Val Val Ala Gln His Ser Tyr Ser Ala Gln	
162 167 172 177	
ggg cca gag gac ctg ggc ttc cga cag ggg gac acg gtg gac gtc ctg	931
Gly Pro Glu Asp Leu Gly Phe Arg Gln Gly Asp Thr Val Asp Val Leu	
178 183 188 193	
tgt gaa gtg gac cag gca tgg ctg gag ggc cac tgt gac ggc cgc atc	979
Cys Glu Val Asp Gln Ala Trp Leu Glu Gly His Cys Asp Gly Arg Ile	
194 199 204 209	
ggc atc ttc ccc aag tgc ttc gtg gtc ccc gcc ggc cct cgg atg tca	1027
Gly Ile Phe Pro Lys Cys Phe Val Val Pro Ala Gly Pro Arg Met Ser	
210 215 220 225	
gga gcc ccc ggc cgc ctg ccc cga tcc cag cag gga gat cag ccc taa	1075
Gly Ala Pro Gly Arg Leu Pro Arg Ser Gln Gln Gly Asp Gln Pro *	
226 231 236 241	
tgatgctgtg tccatgatgc ttttaataaaa aacaaccccc actgcaaaaa aaaaaaaaaa	1134

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 <213> Homo sapiens

<220>
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 <222> (694) .. (1779)

<400> 127

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gcggatgcac	acaaatgaaa	ccctcacttc	aacctgaaga	cattcgcaca	tgagttacgt	180
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aatttcagga	tctttgtcac	tgacagcagc	actaagactt	gttaacttta	tatagttaag	300
aagaacaagg	ctgagcgcg	tgactcacgc	ctgtaagcct	agaactttgg	gaggccaaaag	360
caggcagact	gcttgagccc	aggagtcca	gaccagcctg	ggcaacatgg	caacacccca	420
tctctacaaa	aaaatacaag	aatcagctgg	gcgtggtgat	gtgttcctgt	aatctcagct	480
actcgggagg	cagaggcagg	aggattgctt	gaacccggga	ggcagagggt	gtagttagcc	540
gagatctcgc	cactgcactc	cagtctggac	gacagagtga	gactcagtct	caaataaata	600
aataaatata	taaatataag	gaaaaaaata	aagctgcttt	ctctcttcc	tctcttttg	660
tctcatctgg	ctctgctcca	ggcatctgcc	aca atg tgg	gtg ctt aca	cct gct	714
			Met Trp Val	Leu Thr Pro	Ala	
			1		5	
gct ttt gct	ggg aag ctc	ttg agt gtg	ttc agg caa	cct ctg agc	tct	762
Ala Phe Ala	Gly Lys Leu	Leu Ser Val	Phe Arg Gln	Pro Leu Ser	Ser	
8	13		18		23	
ctg tgg agg	agc ctg gtc	ccg ctg ttc	tgc tgg ctg	agg gca acc	ttc	810
Leu Trp Arg	Ser Leu Val	Pro Leu Phe	Cys Trp Leu	Arg Ala Thr	Phe	
24	29		34		39	
tgg ctg cta	gct acc aag	agg aga aag	cag cag ctg	gtc ctg aga	ggg	858
Trp Leu Leu	Ala Thr Lys	Arg Arg Lys	Gln Gln Leu	Val Leu Arg	Gly	
40	45		50		55	
cca gat gag	acc aaa gag	gag gaa gag	gac cct cct	ctg ccc acc	acc	906
Pro Asp Glu	Thr Lys Glu	Glu Glu Glu	Asp Pro Pro	Leu Pro Thr	Thr	
56	61		66		71	
cca acc agc	gtc aac tat	cac ttc act	cgc cag tgc	aac tac aaa	tgc	954
Pro Thr Ser	Val Asn Tyr	His Phe Thr	Arg Gln Cys	Asn Tyr Lys	Cys	
72	77		82		87	
ggc ttc tgt	ttc cac aca	gcc aaa aca	tcc ttt gtg	ctg ccc ctt	gag	1002
Gly Phe Cys	Phe His Thr	Ala Lys Thr	Ser Phe Val	Leu Pro Leu	Glu	
88	93		98		103	
gaa gca aag	aga gga ttg	ctt ttg ctt	aag gaa gct	ggt atg gag	aag	1050
Glu Ala Lys	Arg Gly Leu	Leu Leu Leu	Lys Glu Ala	Gly Met Glu	Lys	
104	109		114		119	
atc aac ttt	tca ggt gga	gag cca ttt	ctt caa gac	cgg gga gaa	tac	1098
Ile Asn Phe	Ser Gly Gly	Glu Pro Phe	Leu Gln Asp	Arg Gly Glu	Tyr	

120	125	130	135	
ctg ggc aag ttg gtg	agg ttc tgc aaa gta	gag ttg cgg ctg ccc agc		1146
Leu Gly Lys Leu Val	Arg Phe Cys Lys Val	Glu Leu Arg Leu Pro Ser		
136	141	146	151	
gtg acg atc gtg agc	aat gga agc ctg atc	cgg gag agg tgg ttc cag		1194
Val Thr Ile Val Ser	Asn Gly Ser Leu Ile	Arg Glu Arg Trp Phe Gln		
152	157	162	167	
aat tat ggt gag tat	ttg gac att ctc gct atc	tcc tgt gac agc ttt		1242
Asn Tyr Gly Glu Tyr	Leu Asp Ile Leu Ala Ile	Ser Cys Asp Ser Phe		
168	173	178	183	
gac gag gaa gtc aat	gtc ctt att ggc cgt	ggc caa gga aag aag aac		1290
Asp Glu Glu Val Asn	Val Leu Ile Gly Arg	Gly Gln Gly Lys Lys Asn		
184	189	194	199	
cat gtg gaa aac ctt	caa aag ctg agg agg	tgg tgt agg gat tat aga		1338
His Val Glu Asn Leu	Gln Lys Leu Arg Arg	Trp Cys Arg Asp Tyr Arg		
200	205	210	215	
gtc gct ttc aag ata	aat tct gtc att aat	cgt ttc aac gtg gaa gag		1386
Val Ala Phe Lys Ile	Asn Ser Val Ile Asn	Arg Phe Asn Val Glu Glu		
216	221	226	231	
gac atg acg gaa cag	atc aaa gca cta aac	cct gtc cgc tgg aaa gtg		1434
Asp Met Thr Glu Gln	Ile Lys Ala Leu Asn	Pro Val Arg Trp Lys Val		
232	237	242	247	
ttc cag tgc ctc tta	att gag ggt gag aat	tgt gga gaa gat gct cta		1482
Phe Gln Cys Leu Leu	Ile Glu Gly Glu Asn	Cys Gly Glu Asp Ala Leu		
248	253	258	263	
aga gaa gca gaa aga	ttt gtt att ggt gat	gaa gaa ttt gaa aga ttc		1530
Arg Glu Ala Glu Arg	Phe Val Ile Gly Asp	Glu Glu Phe Glu Arg Phe		
264	269	274	279	
ttg gag cgc cac aaa	gaa gtg tcc tgc ttg	gtg cct gaa tct aac cag		1578
Leu Glu Arg His Lys	Glu Val Ser Cys Leu	Val Pro Glu Ser Asn Gln		
280	285	290	295	
aag atg aaa gac tcc	tac ctt att ctg gat	gaa tat atg cgc ttt ctg		1626
Lys Met Lys Asp Ser	Tyr Leu Ile Leu Asp	Glu Tyr Met Arg Phe Leu		
296	301	306	311	
aac tgt aga aag gga	cgg aag gac cct tcc	aag tcc atc ctg gat gtt		1674
Asn Cys Arg Lys Gly	Arg Lys Asp Pro Ser	Lys Ser Ile Leu Asp Val		
312	317	322	327	
ggt gta gaa gaa gct	ata aaa ttc agt gga	ttt gat gaa aag atg ttt		1722
Gly Val Glu Glu Ala	Ile Lys Phe Ser Gly	Phe Asp Glu Lys Met Phe		
328	333	338	343	
ctg aag cga gga gga	aaa tac ata tgg agt	aag gct gat ctg aag ctg		1770
Leu Lys Arg Gly Gly	Lys Tyr Ile Trp Ser	Lys Ala Asp Leu Lys Leu		
344	349	354	359	

gat tgg tag agcggaa agtgggaacga gacttcaaca caccagtggg aaaactccta 1826
Asp Trp *
360

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ctcaatgatg cgtttgtaag aaataagctc tagtgatata tgtgggggca atatttaatt 2186
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aaaggtcatt ttaatttaaa aaaaaaaaaa 3175

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<213> Homo sapiens

<220>

<221> CDS

<222> (480)..(3572)

<400> 128

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tgtccctcgt	ccccccaccc	tgggtcccca	ctgctttacc	tcttgctttg	cagccttctc	180
tcctcacage	cttccctgtg	ctgtgttttt	ggccctgata	gccccatggc	acaactgcac	240
tttgccctcac	ctaggcctgt	ggcttcttgc	ctggcaggtg	ccacttctcc	acttttaagc	300
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atg ggc ttt gac	ctg cag aac	gtc tgg aga	gtc tca cac	atc aac agc		527
Met Gly Phe Asp	Leu Gln Asn	Val Trp Arg	Val Ser His	Ile Asn Ser		
1	5	10	15			
aac tac aaa	ttg tgc ccc	agt tac ccc	cag aag ctg	ctg gtt cct	gtg	575
Asn Tyr Lys	Leu Cys Pro	Ser Tyr Pro	Gln Lys Leu	Leu Val Pro	Val	
17	22	27	32			
tgg atc act	gac aaa gag	ctg gag aac	gtg gct tcc	ttc cgc tcc	tgg	623
Trp Ile Thr	Asp Lys Glu	Leu Glu Asn	Val Ala Ser	Phe Arg Ser	Trp	
33	38	43	48			
aag cgg att	ccc gtg gtt	gtg tat aga	cac ttg cgc	aat ggg gct	gcc	671
Lys Arg Ile	Pro Val Val	Val Tyr Arg	His Leu Arg	Asn Gly Ala	Ala	
49	54	59	64			
atc gcc cgc	tgc agc cag	cca gag atc	agc tgg tgg	ggc tgg cgc	aat	719
Ile Ala Arg	Cys Ser Gln	Pro Glu Ile	Ser Trp Trp	Gly Trp Arg	Asn	
65	70	75	80			
gct gat gat	gag tac ctg	gtc acg tcc	att gct aaa	gcc tgt gcc	ctg	767
Ala Asp Asp	Glu Tyr Leu	Val Thr Ser	Ile Ala Lys	Ala Cys Ala	Leu	
81	86	91	96			
gac ccg ggg	aca agg gcc	act ggg ggc	tcc ctc agc	acc ggg aat	aat	815
Asp Pro Gly	Thr Arg Ala	Thr Gly Gly	Ser Leu Ser	Thr Gly Asn	Asn	
97	102	107	112			
gat acc agc	gag gcg tgt	gat gct gac	ttt gat tct	tct ctg act	gcg	863
Asp Thr Ser	Glu Ala Cys	Asp Ala Asp	Phe Asp Ser	Ser Ser Leu	Thr	
113	118	123	128			
tgc tct gga	gtg gag agc	aca gca gct	cct caa aag	ctg ctg atc	ctg	911
Cys Ser Gly	Val Glu Ser	Thr Ala Ala	Pro Gln Lys	Leu Leu Ile	Leu	
129	134	139	144			

gat gcg cga tcc tac acg gca gca gtg gcc aac cgg gcc aag ggt gga	959
Asp Ala Arg Ser Tyr Thr Ala Ala Val Ala Asn Arg Ala Lys Gly Gly	
145 150 155 160	
ggc tgt gaa tgt gaa gag tac tat ccc aac tgt gag gtc gtg ttc atg	1007
Gly Cys Glu Cys Glu Glu Tyr Tyr Pro Asn Cys Glu Val Val Phe Met	
161 166 171 176	
gga atg gcc aac atc cat gcc atc cgg aac agc ttt cag tac ctc cgg	1055
Gly Met Ala Asn Ile His Ala Ile Arg Asn Ser Phe Gln Tyr Leu Arg	
177 182 187 192	
gct gtg tgt agc cag atg ccg gat cct agc aac tgg ttg tcg gca ctg	1103
Ala Val Cys Ser Gln Met Pro Asp Pro Ser Asn Trp Leu Ser Ala Leu	
193 198 203 208	
gag agt acc aaa tgg ctg cag cac ttg tcg gtg atg cta aaa gca gct	1151
Glu Ser Thr Lys Trp Leu Gln His Leu Ser Val Met Leu Lys Ala Ala	
209 214 219 224	
gtg ctg gtg gct aat aca gta gac cgg gaa ggc cgg cct gtg ctg gta	1199
Val Leu Val Ala Asn Thr Val Asp Arg Glu Gly Arg Pro Val Leu Val	
225 230 235 240	
cac tgc tca gat ggc tgg gac cgc aca ccg cag atc gta gcc ctg gcc	1247
His Cys Ser Asp Gly Trp Asp Arg Thr Pro Gln Ile Val Ala Leu Ala	
241 246 251 256	
aaa ata tta ctg gac cca tat tac agg acg ttg gag ggc ttc caa gtg	1295
Lys Ile Leu Leu Asp Pro Tyr Tyr Arg Thr Leu Glu Gly Phe Gln Val	
257 262 267 272	
tta gtg gag tct gac tgg ctg gat ttt ggg cac aag ttt gga gat cgc	1343
Leu Val Glu Ser Asp Trp Leu Asp Phe Gly His Lys Phe Gly Asp Arg	
273 278 283 288	
tgt ggc cac caa gag aat gtg gag gac caa aac gaa caa tgc cct gtg	1391
Cys Gly His Gln Glu Asn Val Glu Asp Gln Asn Glu Gln Cys Pro Val	
289 294 299 304	
ttc ctc cag tgg ctt gat tct gtt cat cag ttg ctt aag cag ttc ccc	1439
Phe Leu Gln Trp Leu Asp Ser Val His Gln Leu Leu Lys Gln Phe Pro	
305 310 315 320	
tgc atg ttt gaa ttt aat gaa gca ttc ctg gta aaa ctg gtg caa cac	1487
Cys Met Phe Glu Phe Asn Glu Ala Phe Leu Val Lys Leu Val Gln His	
321 326 331 336	
aca tac tcc tgc ctc tac ggc acc ttc ctg gcc aac aac ccc tgt gag	1535
Thr Tyr Ser Cys Leu Tyr Gly Thr Phe Leu Ala Asn Asn Pro Cys Glu	
337 342 347 352	
cga gag aag cgc aac atc tac aag cgg acc tgc tct gtg tgg gcg ctc	1583
Arg Glu Lys Arg Asn Ile Tyr Lys Arg Thr Cys Ser Val Trp Ala Leu	
353 358 363 368	

ctt cga gct ggc aat aaa aac ttt cat aac ttc ctc tac aca ccc agc	1631
Leu Arg Ala Gly Asn Lys Asn Phe His Asn Phe Leu Tyr Thr Pro Ser	
369 374 379 384	
tca gac atg gtc ctg cat cct gtt tgt cat gtc cgg gcc ctg cac ctc	1679
Ser Asp Met Val Leu His Pro Val Cys His Val Arg Ala Leu His Leu	
385 390 395 400	
tgg aca gct gtt tat ctg cca gca tca tct cca tgc aca ctt ggg gaa	1727
Trp Thr Ala Val Tyr Leu Pro Ala Ser Ser Pro Cys Thr Leu Gly Glu	
401 406 411 416	
gaa aac atg gat ctt tac ctt tcc cca gtg gcc cag agc cag gag ttc	1775
Glu Asn Met Asp Leu Tyr Leu Ser Pro Val Ala Gln Ser Gln Glu Phe	
417 422 427 432	
tct ggc cgc tct ctg gac aga tta cct aaa acc aga tcc atg gat gat	1823
Ser Gly Arg Ser Leu Asp Arg Leu Pro Lys Thr Arg Ser Met Asp Asp	
433 438 443 448	
ctt ctt tct gcc tgt gac aca agc agc ccc ctg act cgt aca tcc agt	1871
Leu Leu Ser Ala Cys Asp Thr Ser Ser Pro Leu Thr Arg Thr Ser Ser	
449 454 459 464	
gac cct aac ctg aat aac cac tgt cag gag gtc agg gta ggc ctg gag	1919
Asp Pro Asn Leu Asn Asn His Cys Gln Glu Val Arg Val Gly Leu Glu	
465 470 475 480	
ccc tgg cac agc aat cct gag gga tca gag aca agc ttt gtg gac tct	1967
Pro Trp His Ser Asn Pro Glu Gly Ser Glu Thr Ser Phe Val Asp Ser	
481 486 491 496	
ggg gta gga ggg cct cag caa act gta gga gaa gtg ggt ctt cct cct	2015
Gly Val Gly Gly Pro Gln Gln Thr Val Gly Glu Val Gly Leu Pro Pro	
497 502 507 512	
cct ctg ccc agc agc cag aaa gac tac ttg agc aat aaa cct ttc aag	2063
Pro Leu Pro Ser Ser Gln Lys Asp Tyr Leu Ser Asn Lys Pro Phe Lys	
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Ser His Lys Ser Cys Ser Pro Ser Tyr Lys Leu Leu Asn Thr Ala Val	
529 534 539 544	
cct cgg gaa atg aag agc aac acc tct gat cct gag atc aaa gtc cta	2159
Pro Arg Glu Met Lys Ser Asn Thr Ser Asp Pro Glu Ile Lys Val Leu	
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gaa gag act aag gga cca gct cca gac cct tct gcc cag gat gag ctg	2207
Glu Glu Thr Lys Gly Pro Ala Pro Asp Pro Ser Ala Gln Asp Glu Leu	
561 566 571 576	
ggg agg act tta gat ggc ata ggg gag cca cct gaa cat tgt cct gaa	2255
Gly Arg Thr Leu Asp Gly Ile Gly Glu Pro Pro Glu His Cys Pro Glu	
577 582 587 592	
aca gaa gct gtc agt gca ctc tcc aag gtc att tct aac aag tgt gat	2303

Thr Glu Ala Val Ser	Ala Leu Ser Lys Val	Ile Ser Asn Lys Cys Asp	
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gga gtt tgt aat ttt	cct gag tct tcc cag	aac tct cct aca ggt acg	2351
Gly Val Cys Asn Phe	Pro Glu Ser Ser Gln	Asn Ser Pro Thr Gly Thr	
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ccc caa cag gcc cag	cca gac tcc atg cta	ggt gtg ccc tcc aag tgt	2399
Pro Gln Gln Ala Gln	Pro Asp Ser Met Leu	Gly Val Pro Ser Lys Cys	
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gtt ctt gat cac agc	ctc agc acc gtt tgc	aac cca ccg agt gct gcc	2447
Val Leu Asp His Ser	Leu Ser Thr Val Cys	Asn Pro Pro Ser Ala Ala	
641	646	651	656
tgc caa act cct cta	gac cca agc act gac	ttc ctc aac caa gat ccc	2495
Cys Gln Thr Pro Leu	Asp Pro Ser Thr Asp	Phe Leu Asn Gln Asp Pro	
657	662	667	672
tca ggg tct gtg gca	agt atc tcc cac cag	gaa caa ctg agt tct gtg	2543
Ser Gly Ser Val Ala	Ser Ile Ser His Gln	Glu Gln Leu Ser Ser Val	
673	678	683	688
ccg gat ctg acc cat	ggg gag gaa gac att	ggt aaa aga gga aat aat	2591
Pro Asp Leu Thr His	Gly Glu Glu Asp Ile	Gly Lys Arg Gly Asn Asn	
689	694	699	704
agg aat ggg cag tta	ttg gaa aat cct cgc	ttt ggg aaa atg cca ttg	2639
Arg Asn Gly Gln Leu	Leu Glu Asn Pro Arg	Phe Gly Lys Met Pro Leu	
705	710	715	720
gaa ttg gtc cgg aag	cca att tct cag agc	cag atc agt gag ttc tct	2687
Glu Leu Val Arg Lys	Pro Ile Ser Gln Ser	Gln Ile Ser Glu Phe Ser	
721	726	731	736
ttt cta ggg tcc aac	tgg gac agc ttc caa	ggg atg gtg act tca ttc	2735
Phe Leu Gly Ser Asn	Trp Asp Ser Phe Gln	Gly Met Val Thr Ser Phe	
737	742	747	752
cca agt ggg gag gcc	acc cct cgg cgg ctg	ctt tcc tat ggc tgt tgt	2783
Pro Ser Gly Glu Ala	Thr Pro Arg Arg Leu	Leu Ser Tyr Gly Cys Cys	
753	758	763	768
agc aag agg cca aac	agt aag cag atg cgg	gcc aca ggg ccc tgc ttt	2831
Ser Lys Arg Pro Asn	Ser Lys Gln Met Arg	Ala Thr Gly Pro Cys Phe	
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ggg ggc cag tgg gct	cag aga gaa ggt gtg	aag tca cct gtc tgt tct	2879
Gly Gly Gln Trp Ala	Gln Arg Glu Gly Val	Lys Ser Pro Val Cys Ser	
785	790	795	800
agt cat tcc aat gga	cat tgt act ggc cca	gga gga aag aac cag atg	2927
Ser His Ser Asn Gly	His Cys Thr Gly Pro	Gly Gly Lys Asn Gln Met	
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tgg ttg tcc agt cat	cca aag caa gtc tct	agc aca aag ccc gtt cca	2975
Trp Leu Ser Ser His	Pro Lys Gln Val Ser	Ser Thr Lys Pro Val Pro	

817	822	827	832	
ctg aac tgc cct tct	cca gtg cct cct ctg	tat ttg gat gat gat	gga	3023
Leu Asn Cys Pro Ser	Pro Val Pro Pro Leu	Tyr Leu Asp Asp Asp	Gly	
833	838	843	848	
ctc ccc ttt ccc acg	gat gtg atc cag cat	agg tta cgg caa atc	gaa	3071
Leu Pro Phe Pro Thr	Asp Val Ile Gln His	Arg Leu Arg Gln Ile	Glu	
849	854	859	864	
gca ggg tac aaa caa	gag gtg gag cag cta	cgt cga cag gtg cgt	gag	3119
Ala Gly Tyr Lys Gln	Glu Val Glu Gln Leu	Arg Arg Gln Val Arg	Glu	
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ctt cag atg agg ctg	gac atc cgt cac tgc	tgt gcc cct cca gca	gag	3167
Leu Gln Met Arg Leu	Asp Ile Arg His Cys	Cys Ala Pro Pro Ala	Glu	
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ccc ccc atg gac tat	gag gat gat ttt aca	tgt ttg aag gag tca	gat	3215
Pro Pro Met Asp Tyr	Glu Asp Asp Phe Thr	Cys Leu Lys Glu Ser	Asp	
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Gly Ser Asp Thr Glu	Asp Phe Gly Ser Asp	His Ser Glu Asp Cys	Leu	
913	918	923	928	
tca gaa gca agc tgg	gaa cct gtt gat aag	aaa gag act gag gtg	act	3311
Ser Glu Ala Ser Trp	Glu Pro Val Asp Lys	Lys Glu Thr Glu Val	Thr	
929	934	939	944	
cgc tgg gtt cca gac	cat atg gca tca cac	tgc tat aac tgt gac	tgt	3359
Arg Trp Val Pro Asp	His Met Ala Ser His	Cys Tyr Asn Cys Asp	Cys	
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gaa ttc tgg ttg gcc	aaa cga aga cac cat	tgc aga aat tgt ggg	aat	3407
Glu Phe Trp Leu Ala	Lys Arg Arg His His	Cys Arg Asn Cys Gly	Asn	
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gta ttt tgt gct gga	tgc tgc cac ctg aag	ctg ccc att cct gat	cag	3455
Val Phe Cys Ala Gly	Cys Cys His Leu Lys	Leu Pro Ile Pro Asp	Gln	
977	982	987	992	
caa ctc tat gac cca	gtt ctc gtc tgt aac	tca tgt tac gaa cac	att	3503
Gln Leu Tyr Asp Pro	Val Leu Val Cys Asn	Ser Cys Tyr Glu His	Ile	
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caa gtc tct cgt gcc	agg gaa ctc atg agc	caa cag ctg aag aaa	ccc	3551
Gln Val Ser Arg Ala	Arg Glu Leu Met Ser	Gln Gln Leu Lys Lys	Pro	
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Ile Ala Thr Ala Ser	Ser *			
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Met Thr Phe Phe Ser Ser Val Ala Asp Phe Ile Gly Leu Asp
1 5 10
ccc aga att gct gca tgg ctt ata gat cct agt gat gcc aca ccc tct 156
Pro Arg Ile Ala Ala Trp Leu Ile Asp Pro Ser Asp Ala Thr Pro Ser
15 20 25 30
ttt gaa gat tta gta gaa aaa tac tgt gaa aaa tcc att aca gtt aaa 204
Phe Glu Asp Leu Val Glu Lys Tyr Cys Glu Lys Ser Ile Thr Val Lys
31 36 41 46
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Val Asn Ser Thr Tyr Gly Asn Ser Ser Arg Asn Ile Val Asn Gln Asn
47 52 57 62
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Val Arg Glu Asn Leu Lys Thr Leu Tyr Arg Leu Thr Met Asp Leu Cys
63 68 73 78
tct aaa ctg aag gat tat ggt tta tgg caa cta ttt cgt act ttg gag 348
Ser Lys Leu Lys Asp Tyr Gly Leu Trp Gln Leu Phe Arg Thr Leu Glu
79 84 89 94
ctt cct ctg ata cca att ttg gca gtg atg gaa agc cat gcc att cag 396
Leu Pro Leu Ile Pro Ile Leu Ala Val Met Glu Ser His Ala Ile Gln
95 100 105 110
gtg aac aaa gag gag atg gag aag acg tca gca ctt ctt ggg gct cgt 444
Val Asn Lys Glu Glu Met Glu Lys Thr Ser Ala Leu Leu Gly Ala Arg

111	116	121	126	
ctc aag gaa ttg gag	caa gaa gct cat ttt	gtt gca gga gaa cgg	ttt	492
Leu Lys Glu Leu Glu	Gln Glu Ala His Phe	Val Ala Gly Glu Arg	Phe	
127	132	137	142	
ctt ata acg agc aat	aac cag ctt cga gag	atc ctc ttt ggc aag	tta	540
Leu Ile Thr Ser Asn	Asn Gln Leu Arg Glu	Ile Leu Phe Gly Lys	Leu	
143	148	153	158	
aag ctg cac ctg ctg	agt caa agg aac agt	ctc ccc aga acg ggg	ttg	588
Lys Leu His Leu Leu	Ser Gln Arg Asn Ser	Leu Pro Arg Thr Gly	Leu	
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cag aaa tac ccg tct	aca gtg tca gaa gca	tta aat gct ctg cga	gac	636
Gln Lys Tyr Pro Ser	Thr Val Ser Glu Ala	Leu Asn Ala Leu Arg	Asp	
175	180	185	190	
ctt cat cca tta ccc	aag ata att ttg gaa	tac agg cag gtt cac	aag	684
Leu His Pro Leu Pro	Lys Ile Ile Leu Glu	Tyr Arg Gln Val His	Lys	
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atc aag tca acc ttt	gta gat gga tta cta	gct tgc atg aaa aag	ggc	732
Ile Lys Ser Thr Phe	Val Asp Gly Leu Leu	Ala Cys Met Lys Lys	Gly	
207	212	217	222	
tcc att tcc tct aca	tgg aat cag act gga	act gtg act gga aga	ctt	780
Ser Ile Ser Ser Thr	Trp Asn Gln Thr Gly	Thr Val Thr Gly Arg	Leu	
223	228	233	238	
tca gcc aag cat cct	aat atc caa ggt atc	tcc aag cac cca att	cag	828
Ser Ala Lys His Pro	Asn Ile Gln Gly Ile	Ser Lys His Pro Ile	Gln	
239	244	249	254	
att act aca cct aag	aat ttt aaa ggt aaa	gaa gac aag att ctc	acg	876
Ile Thr Thr Pro Lys	Asn Phe Lys Gly Lys	Glu Asp Lys Ile Leu	Thr	
255	260	265	270	
atc tcc ccg agg gcc	atg ttt gtt tca tcc	aaa ggc cac acc ttt	cta	924
Ile Ser Pro Arg Ala	Met Phe Val Ser Ser	Lys Gly His Thr Phe	Leu	
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gca gca gac ttt tca	cag att gaa ttg cgc	att ctt aca cat tta	tct	972
Ala Ala Asp Phe Ser	Gln Ile Glu Leu Arg	Ile Leu Thr His Leu	Ser	
287	292	297	302	
gga gat ccg gaa ctt	ctg aag tta ttc cag	gaa tct gaa aga gat	gat	1020
Gly Asp Pro Glu Leu	Leu Lys Leu Phe Gln	Glu Ser Glu Arg Asp	Asp	
303	308	313	318	
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Val Phe Ser Thr Leu	Thr Ser Gln Trp Lys	Asp Val Pro Val Glu	Gln	
319	324	329	334	
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Val Thr His Ala Asp	Arg Glu Gln Thr Lys	Lys Val Val Tyr Ala	Val	
335	340	345	350	

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Val Tyr Gly Ala Gly Lys Glu Arg Leu Ala Ala Cys Leu Gly Val Pro	
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Ile Gln Glu Ala Ala Gln Phe Leu Glu Ser Phe Leu Gln Lys Tyr Lys	
367 372 377 382	
aaa atc aag gac ttc gcc cga gca gct att gcc cag tgt cac cag aca	1260
Lys Ile Lys Asp Phe Ala Arg Ala Ala Ile Ala Gln Cys His Gln Thr	
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His Ala His Asp Gln Gln Leu Arg Ala Gln Ala Glu Arg Gln Ala Val	
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Asn Phe Val Val Gln Gly Ser Ala Ala Asp Leu Cys Lys Leu Ala Met	
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Ile His Val Phe Thr Ala Val Ala Ala Ser His Thr Leu Thr Ala Arg	
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Leu Val Ala Gln Ile His Asp Glu Leu Leu Phe Glu Val Glu Asp Pro	
463 468 473 478	
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Gln Ile Pro Glu Cys Ala Ala Leu Val Arg Arg Thr Met Glu Ser Leu	
479 484 489 494	
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Glu Gln Val Pro Leu Lys Val Ser Leu Ser Ala Gly Arg Ser Trp Gly	
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His Leu Val Pro Leu Gln Glu Ala Trp Gly Pro Pro Pro Gly Pro Cys	
511 516 521 526	
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Arg Thr Glu Ser Pro Ser Asn Ser Leu Ala Ala Pro Gly Ser Pro Ala	
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Ser Thr Gln Pro Pro Pro Leu His Phe Ser Pro Ser Phe Cys Leu *	
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1906

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gatccaga	atg aaa ggc aag aaa ggt att gtt gca gca tct ggc agt gag	350				
	Met Lys Gly Lys Lys Gly Ile Val Ala Ala Ser Gly Ser Glu					
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act gag gat gag gac agc atg gac att ccc ttg gac ctt tct tca tcc	398					
Thr Glu Asp Glu Asp Ser Met Asp Ile Pro Leu Asp Leu Ser Ser Ser						
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Ala Gly Ser Gly Lys Arg Arg Arg Arg Gly Asn Leu Pro Lys Glu Ser						
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Thr Leu Gln Val Cys Asn Trp Phe Ile Asn Ala Arg Arg Arg Leu Leu						
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cct gac atg ctg aga aag gat ggc aaa gat cca aat cag ttc aca att	638					
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Ser Cys Thr Ala Gly Pro Asn Pro Thr Leu Gly Arg Pro Leu Ser Pro	
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Lys Pro Ser Ser Pro Gly Ser Val Leu Ala Arg Pro Ser Val Ile Cys	
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His Thr Thr Val Thr Ala Leu Lys Asp Val Pro Phe Ser Leu Cys Gln	
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Ser Val Gly Val Gly Gln Asn Thr Asp Ile Gln Gln Ile Ala Ala Lys	
191 196 201 206	
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223 228 233 238	
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Thr Pro Pro Asp Leu Asn Gln Asp Phe Ser Gly Phe Gln Leu Leu Val	
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Asp Val Ala Leu Lys Arg Ala Ala Glu Met Glu Leu Gln Ala Lys Leu	
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Thr Ala *	
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Gln Ile Met Thr His Leu Pro Gly Ala Ile Ser Asp Met Ile Tyr Ile	
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tca gag ctc caa gat	atg gca gct agg caa	cag cag cag att gaa aat	672	
Ser Glu Leu Gln Asp	Met Ala Ala Arg Gln	Gln Gln Gln Ile Glu Asn		
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att cgt gca atg aga	gga caa gtc gac tac	agc aaa atc atg aac ggc	864	
Ile Arg Ala Met Arg	Gly Gln Val Asp Tyr	Ser Lys Ile Met Asn Gly		
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Gly Pro Tyr Ile Gln Val Pro Ser Ala Gly Ser Phe Pro Val Leu Gly	
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Asp Pro Ile Lys Pro Gln Ser Leu Ser Ile Ala Ser Asn Ala Ala His	
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Gly Arg Ser Lys Ser Ala Asn Asp Gly Asn Trp Pro Thr Leu Lys Gln	
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Gln Pro Val Pro Phe Ser Ala Leu Gly Pro Thr Glu Lys Pro Gly Ile	
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Lys Ser Val Lys Ala	Val Tyr Gly Lys Pro	Val Leu Pro Ser Gly Ser	
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Thr Ser Pro Ser Pro	Leu Pro Phe Leu His	Gly Ser Leu Ser Thr Gly	
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Gln Asp Gly Pro Ala	Ala Pro Ala Asp Gly	Ser Thr Val Glu Ser Leu	
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Glu Gly Pro Gly Gly	Pro Asn Ile Gln Lys	Leu Leu Tyr Gln Arg Phe	
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Pro Ser Gln Asp Phe	Met Gly Thr Leu Ala	Asp Val Asp Asn Gly Asn	
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Thr Asn Ala Asn Gly	Asn Leu Glu Glu Leu	Pro Pro Ala Gln Pro Thr	
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Val	Pro	Thr	Thr	Glu	Gln	Ile	Pro	Ser	Pro	Val	Ala	Glu	Ala	Pro	Ser	
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Asn Ala Lys Ile Ile Gly Lys Ala Met Leu Asn Met Phe His Thr Met				
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Cys Thr Phe Leu Pro Pro Phe Pro Ala His Leu Pro Thr Ser Pro Asp				
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Thr Asn Lys Ala Glu Ser Ser Gly Lys Trp Asn Gly Leu His Thr Pro				
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Val Ser Val Gln Ser Arg Leu Asn Leu Ser Ile Glu Val Pro Ser Pro				
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Ser Gln Leu Asp Gln Ser Val Leu Glu Ala Leu Pro Pro Asp Leu Arg				
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Glu Gln Val Glu Gln Val Cys Ala Val Gln Gln Ala Glu Ser His Gly				
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Asp Lys Lys Lys Glu Pro Val Asn Gly Cys Asn Thr Gly Ile Leu Pro				
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Gln Pro Val Gly Thr Val Leu Leu Gln Ile Pro Glu Pro Gln Glu Ser	
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Ala Gly Ala Val Glu Phe Asn Asp Val Lys Thr Leu Leu Arg Glu Trp	
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Ile Thr Thr Ile Ser Asp Pro Met Glu Glu Asp Ile Leu Gln Val Val	
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Lys Tyr Cys Thr Asp Leu Ile Glu Glu Lys Asp Leu Glu Lys Leu Asp	
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Val Trp Asn Met Ala Phe Asp Phe Ile Leu Asp Asn Val Gln Val Val	
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Arg Trp Asn Thr Asn Glu Glu Ile Ala Ser Tyr Leu Ile Thr Phe Glu	
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Gly Ser Ile Ile Leu Tyr Asn Arg Lys Lys Val Lys Tyr Arg Lys Asp	
72 77 82 87	
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Gly Tyr Leu Trp Lys Lys Arg Lys Asp Gly Lys Thr Thr Arg Glu Asp	
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Val His Ser Ser Ile Val Pro Thr Phe His Arg Arg Cys Tyr Trp Leu	
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Gln Leu Lys Pro Met Phe His Gly Ile Lys Trp Ser Cys Gly Asn Gly	
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His Pro Thr Lys Pro Ala Pro Arg Thr His Ala Cys Leu Cys Ser Gly	
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Gly Leu Gly Ser Gly Ser Leu Thr His Lys Cys Ser Ser Thr Lys His	
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Ile Pro His Pro His Pro Pro Glu Pro Pro Pro Leu Ile Ala Pro Leu	
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Pro 312	Thr 317	Ser 322	Arg 327	Gly	Gly	Ser	Ser	Arg	Gly	Gly	Thr	Ala	Ile	Leu	Leu	
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Ser 472	Pro 477	Ala 482	Pro 487	Leu	Glu	Pro	Ser	Ser	Arg	Val	Gly	Arg	Gly	Glu	Ala	
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Thr Asp Phe Ser Pro Glu Trp Ser Tyr Pro Glu Gly Gly Val Lys Val				
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Phe Asp His Ile Ala Val Pro Ala Ser Leu Val Gln Pro Gly Val Leu				
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cgc tgc tac tgt ccc gcc cat gag gta ggg ctg gtg tct ttg cag gtg				1947
Arg Cys Tyr Cys Pro Ala His Glu Val Gly Leu Val Ser Leu Gln Val				
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Thr Trp Lys Gly Pro Glu Arg Leu Ala His Gly Ser Pro Phe Arg Gly				
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Met Ser Leu Leu His Leu Ala Ala Ala Gln Gly Tyr Ala Arg Leu Ile				
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Cys Leu Glu Glu Leu Gln Arg Gln Glu Pro Ser Val Glu Pro Pro Phe	
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Ala Leu Ser Pro Pro Ser Ser Ser Pro Asp Thr Gly Leu Ser Ser Val	
824 829 834 839	
tcc tcg ccc tcg gag ctg tcg gat ggc acc ttt tcc gtc acg tca gcc	2715
Ser Ser Pro Ser Glu Leu Ser Asp Gly Thr Phe Ser Val Thr Ser Ala	
840 845 850 855	
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Tyr Ser Ser Ala Pro Asp Gly Ser Pro Pro Pro Ala Pro Leu Pro Ala	
856 861 866 871	
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Ser Glu Met Thr Met Glu Asp Met Ala Pro Gly Gln Leu Ser Ser Gly	
872 877 882 887	
gtc cca gaa gcc ccc cta ctc ctc atg gac tat gag gct acc aac tcc	2859
Val Pro Glu Ala Pro Leu Leu Leu Met Asp Tyr Glu Ala Thr Asn Ser	
888 893 898 903	
aag ggg ccc ctc tcc tcc ctt cct gcc ctc cca cca gct tca gat gat	2907
Lys Gly Pro Leu Ser Ser Leu Pro Ala Leu Pro Pro Ala Ser Asp Asp	
904 909 914 919	
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Gly Ala Ala Pro Glu Asp Ala Asp Ser Pro Gln Ala Val Asp Val Ile	
920 925 930 935	
ccg gtg gac atg atc tca cta gcc aag cag atc atc gaa gcc aca ccg	3003
Pro Val Asp Met Ile Ser Leu Ala Lys Gln Ile Ile Glu Ala Thr Pro	
936 941 946 951	
gag cgg att aaa cga gag gac ttc gtg ggg ctg ccc gag gct gga gcc	3051
Glu Arg Ile Lys Arg Glu Asp Phe Val Gly Leu Pro Glu Ala Gly Ala	
952 957 962 967	

tca atg cgg gag cgg aca ggg gct gtg ggg ctc agt gag acc atg tcc	3099
Ser Met Arg Glu Arg Thr Gly Ala Val Gly Leu Ser Glu Thr Met Ser	
968 973 978 983	
tgg ctg gcc agc tac ctg gag aat gtg gac cat ttc ccc agc tca acc	3147
Trp Leu Ala Ser Tyr Leu Glu Asn Val Asp His Phe Pro Ser Ser Thr	
984 989 994 999	
cct ccc agc gaa ctg ccc ttt gag cga ggt cgc ctg gct gtc cct tca	3195
Pro Pro Ser Glu Leu Pro Phe Glu Arg Gly Arg Leu Ala Val Pro Ser	
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Ala Pro Ser Trp Ala Glu Phe Leu Ser Ala Ser Thr Ser Gly Lys Met	
1016 1021 1026 1031	
gaa agt gat ttt gcc ctg ctg aca cta tca gat cac gag cag cgg gaa	3291
Glu Ser Asp Phe Ala Leu Leu Thr Leu Ser Asp His Glu Gln Arg Glu	
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Leu Tyr Glu Ala Ala Arg Val Ile Gln Thr Ala Phe Arg Lys Tyr Lys	
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Gly Arg Arg Leu Lys Glu Gln Gln Glu Val Ala Ala Val Ile Gln	
1064 1069 1074 1079	
cgc tgt tac cgg aag tac aag cag ctg acc tgg att gca ctt aag ttt	3435
Arg Cys Tyr Arg Lys Tyr Lys Gln Leu Thr Trp Ile Ala Leu Lys Phe	
1080 1085 1090 1095	
gca ctc tat aag aag atg acc cag gcg gcc atc ctg atc cag agc aag	3483
Ala Leu Tyr Lys Lys Met Thr Gln Ala Ala Ile Leu Ile Gln Ser Lys	
1096 1101 1106 1111	
ttc cga agc tac tat gaa cag aag cga ttt cag cag agc cgc cga gcg	3531
Phe Arg Ser Tyr Tyr Glu Gln Lys Arg Phe Gln Gln Ser Arg Arg Ala	
1112 1117 1122 1127	
gct gtg ctc atc cag cag cac tac cgc tcc tac cgc cgc agg ccc ggc	3579
Ala Val Leu Ile Gln Gln His Tyr Arg Ser Tyr Arg Arg Arg Pro Gly	
1128 1133 1138 1143	
cct ccc cac cgg act tcg gcc acc ctg cct gcc cgc aac aaa ggc tcc	3627
Pro Pro His Arg Thr Ser Ala Thr Leu Pro Ala Arg Asn Lys Gly Ser	
1144 1149 1154 1159	
ttt ctc acc aag aag cag gac cag gca gcc cgg aag atc atg aga ttc	3675
Phe Leu Thr Lys Lys Gln Asp Gln Ala Ala Arg Lys Ile Met Arg Phe	
1160 1165 1170 1175	
ctg cgg cgc tgc cga cac agg atg agg gaa ctg aag cag aac cag gag	3723
Leu Arg Arg Cys Arg His Arg Met Arg Glu Leu Lys Gln Asn Gln Glu	
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Leu Glu Gly Leu Pro Gln Pro Gly Leu Ala Thr *
 1192 1197 1202

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 catttttctc ctagtctggt ttttttttcc cggctctgca cctggattgt atcttcagca 240
 aacaatcggg cactttgaga actaactgga gacagtcttg tagggaagat ctgtatggaa 300
 ttatctgctt ttatggtgaa cttggcattt gtgaatggga atcttggttca caatattaat 360
 tgctagcaaa aacaagaaaa agaacacagg agtaaaacgt ggatttttct gaatacgcac 420
 tgtgatgacc agcaattacc ttaccgacta atatccagag gagaataatt tggaagactg 480

ttgtggggaa cagcctttaa gagctggaag	atg aaa gct ccg att cca cac	531
	Met Lys Ala Pro Ile Pro His	
	1 5	
ttg att ctc tta tac gct act ttt act cag agt ttg aag gtt gtg acc	579	
Leu Ile Leu Leu Tyr Ala Thr Phe Thr Gln Ser Leu Lys Val Val Thr		
8 13 18 23		
aaa aga ggc tcc gcc gat gga tgc act gac tgg tct atc gat atc aag	627	
Lys Arg Gly Ser Ala Asp Gly Cys Thr Asp Trp Ser Ile Asp Ile Lys		
24 29 34 39		
aaa tat caa gtt ttg gtg gga gag cct gtt cga atc aaa tgt gca ctc	675	
Lys Tyr Gln Val Leu Val Gly Glu Pro Val Arg Ile Lys Cys Ala Leu		
40 45 50 55		
ttt tat ggt tat atc aga aca aat tac tcc ctt gcc caa agt gct gga	723	
Phe Tyr Gly Tyr Ile Arg Thr Asn Tyr Ser Leu Ala Gln Ser Ala Gly		
56 61 66 71		
ctc agt ttg atg tgg tac aaa agt tct ggt cct gga gac ttt gaa gag	771	
Leu Ser Leu Met Trp Tyr Lys Ser Ser Gly Pro Gly Asp Phe Glu Glu		
72 77 82 87		
cca ata gcc ttt gac gga agt aga atg agc aaa gaa gaa gac tcc att	819	
Pro Ile Ala Phe Asp Gly Ser Arg Met Ser Lys Glu Glu Asp Ser Ile		
88 93 98 103		
tgg ttc cgg cca aca ttg cta cag gac agt ggt ctc tac gcc tgt gtc	867	
Trp Phe Arg Pro Thr Leu Leu Gln Asp Ser Gly Leu Tyr Ala Cys Val		
104 109 114 119		
atc aga aac tcc act tac tgt atg aaa gta tcc atc tca ctg aca gtg	915	
Ile Arg Asn Ser Thr Tyr Cys Met Lys Val Ser Ile Ser Leu Thr Val		
120 125 130 135		
ggt gaa aat gac act gga ctc tgc tat aat tcc aag atg aag tat ttt	963	
Gly Glu Asn Asp Thr Gly Leu Cys Tyr Asn Ser Lys Met Lys Tyr Phe		
136 141 146 151		
gaa aaa gct gaa ctt agc aaa agc aag gaa att tca tgc cgt gac ata	1011	
Glu Lys Ala Glu Leu Ser Lys Ser Lys Glu Ile Ser Cys Arg Asp Ile		
152 157 162 167		
gag gat ttt cta ctg cca acc aga gaa cct gaa atc ctt tgg tac aag	1059	
Glu Asp Phe Leu Leu Pro Thr Arg Glu Pro Glu Ile Leu Trp Tyr Lys		
168 173 178 183		
gaa tgc agg aca aaa aca tgg agg cca agt att gta ttc aaa aga gat	1107	
Glu Cys Arg Thr Lys Thr Trp Arg Pro Ser Ile Val Phe Lys Arg Asp		
184 189 194 199		
act ctg ctt ata aga gaa gtc aga gaa gat gac att gga aat tat acc	1155	
Thr Leu Leu Ile Arg Glu Val Arg Glu Asp Asp Ile Gly Asn Tyr Thr		
200 205 210 215		

tgt gaa tta aaa tat gga ggc ttt gtt gtg aga aga act act gaa tta	1203
Cys Glu Leu Lys Tyr Gly Gly Phe Val Val Arg Arg Thr Thr Glu Leu	
216 221 226 231	
act gtt aca gcc cct ctg act gat aag cca ccc aag ctt ttg tat cct	1251
Thr Val Thr Ala Pro Leu Thr Asp Lys Pro Pro Lys Leu Leu Tyr Pro	
232 237 242 247	
atg gaa agt aaa ctg aca att cag gag acc cag ctg ggt gac tct gct	1299
Met Glu Ser Lys Leu Thr Ile Gln Glu Thr Gln Leu Gly Asp Ser Ala	
248 253 258 263	
aat cta acc tgc aga gct ttc ttt ggg tac agc gga gat gtc agt cct	1347
Asn Leu Thr Cys Arg Ala Phe Phe Gly Tyr Ser Gly Asp Val Ser Pro	
264 269 274 279	
tta att tac tgg atg aaa gga gaa aaa ttt att gaa gat ctg gat gaa	1395
Leu Ile Tyr Trp Met Lys Gly Glu Lys Phe Ile Glu Asp Leu Asp Glu	
280 285 290 295	
aat cga gtt tgg gaa agt gac att aga att ctt aag gag cat ctt ggg	1443
Asn Arg Val Trp Glu Ser Asp Ile Arg Ile Leu Lys Glu His Leu Gly	
296 301 306 311	
gaa cag gaa gtt tcc atc tca tta att gtg gac tct gtg gaa gaa ggt	1491
Glu Gln Glu Val Ser Ile Ser Leu Ile Val Asp Ser Val Glu Glu Gly	
312 317 322 327	
gac ttg gga aat tac tcc tgt tat gtt gaa aat gga aat gga cgt cga	1539
Asp Leu Gly Asn Tyr Ser Cys Tyr Val Glu Asn Gly Asn Gly Arg Arg	
328 333 338 343	
cac gcc agc gtt ctc ctt cat aaa cga gag cta atg tac aca gtg gaa	1587
His Ala Ser Val Leu Leu His Lys Arg Glu Leu Met Tyr Thr Val Glu	
344 349 354 359	
ctt gct gga ggc ctt ggt gct ata ctc ttg ctg ctt gta tgt ttg gtg	1635
Leu Ala Gly Gly Leu Gly Ala Ile Leu Leu Leu Leu Val Cys Leu Val	
360 365 370 375	
acc atc tac aag tgt tac aag ata gaa atc atg ctc ttc tac agg aat	1683
Thr Ile Tyr Lys Cys Tyr Lys Ile Glu Ile Met Leu Phe Tyr Arg Asn	
376 381 386 391	
cat ttt gga gct gaa gag ctc gat gga gac aat aaa gat tat gat gca	1731
His Phe Gly Ala Glu Glu Leu Asp Gly Asp Asn Lys Asp Tyr Asp Ala	
392 397 402 407	
tac tta tca tac acc aaa gtg gat cct gac cag tgg aat caa gag act	1779
Tyr Leu Ser Tyr Thr Lys Val Asp Pro Asp Gln Trp Asn Gln Glu Thr	
408 413 418 423	
ggg gaa gaa gaa cgt ttt gcc ctt gaa atc cta cct gat atg ctt gaa	1827
Gly Glu Glu Glu Arg Phe Ala Leu Glu Ile Leu Pro Asp Met Leu Glu	
424 429 434 439	
aag cat tat gga tat aag ttg ttt ata cca gat aga gat tta atc cca	1875

Lys His Tyr Gly Tyr Lys Leu Phe Ile Pro Asp Arg Asp Leu Ile Pro	
440 445 450 455	
act gga aca tac att gaa gat gtg gca aga tgt gta gat caa agc aag	1923
Thr Gly Thr Tyr Ile Glu Asp Val Ala Arg Cys Val Asp Gln Ser Lys	
456 461 466 471	
cgg ctg att att gtc atg acc cca aat tac gta gtt aga agg ggc tgg	1971
Arg Leu Ile Ile Val Met Thr Pro Asn Tyr Val Val Arg Arg Gly Trp	
472 477 482 487	
agc atc ttt gag ctg gaa acc aga ctt cga aat atg ctt gtg act gga	2019
Ser Ile Phe Glu Leu Glu Thr Arg Leu Arg Asn Met Leu Val Thr Gly	
488 493 498 503	
gaa att aaa gtg att cta att gaa tgc agt gaa ctg aga gga att atg	2067
Glu Ile Lys Val Ile Leu Ile Glu Cys Ser Glu Leu Arg Gly Ile Met	
504 509 514 519	
aac tac cag gag gtg gag gcc ctg aag cac acc atc aag ctc ctg acg	2115
Asn Tyr Gln Glu Val Glu Ala Leu Lys His Thr Ile Lys Leu Leu Thr	
520 525 530 535	
gtc att aaa tgg cat gga cca aaa tgc aac aag ttg aac tcc aag ttc	2163
Val Ile Lys Trp His Gly Pro Lys Cys Asn Lys Leu Asn Ser Lys Phe	
536 541 546 551	
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Trp Lys Arg Leu Gln Tyr Glu Met Pro Phe Lys Arg Ile Glu Pro Ile	
552 557 562 567	
aca cat gag cag gct tta gat gtc agt gag caa ggg cct ttt ggg gag	2259
Thr His Glu Gln Ala Leu Asp Val Ser Glu Gln Gly Pro Phe Gly Glu	
568 573 578 583	
ctg cag act gtc tgc gcc att tcc atg gcc gcg gcc acc tcc aca gct	2307
Leu Gln Thr Val Ser Ala Ile Ser Met Ala Ala Ala Thr Ser Thr Ala	
584 589 594 599	
cta gcc act gcc cat cca gat ctc cgt tct acc ttt cac aac acg tac	2355
Leu Ala Thr Ala His Pro Asp Leu Arg Ser Thr Phe His Asn Thr Tyr	
600 605 610 615	
cat tca caa atg cgt cag aaa cac tac tac cga agc tat gag tac gac	2403
His Ser Gln Met Arg Gln Lys His Tyr Tyr Arg Ser Tyr Glu Tyr Asp	
616 621 626 631	
gta cct cct acc ggc acc ctg cct ctt acc tcc ata ggc aat cag cat	2451
Val Pro Pro Thr Gly Thr Leu Pro Leu Thr Ser Ile Gly Asn Gln His	
632 637 642 647	
acc tac tgt aac atc cct atg aca ctc atc aac ggg cag cgg cca cag	2499
Thr Tyr Cys Asn Ile Pro Met Thr Leu Ile Asn Gly Gln Arg Pro Gln	
648 653 658 663	
aca aaa tcg agc agg gag cag aat cca gat gag gcc cac aca aac agt	2547
Thr Lys Ser Ser Arg Glu Gln Asn Pro Asp Glu Ala His Thr Asn Ser	

664	669	674	679	
gcc atc ctg ccg ctg	ttg cca agg gag acc	agt ata tcc agt gtg ata	2595	
Ala Ile Leu Pro Leu	Leu Pro Arg Glu Thr	Ser Ile Ser Ser Val Ile		
680	685	690	695	

tgg tga cagaaaagca	agggacatcc	cgccccctggg	aggttgagtg	gaatctgcag	2651
Trp *					
696					

tccagtgcct	ggaactaaat	cctcgactgc	tgctgttaaa	aaacatgcat	tagaatctct	2711
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agaacacgag	gaaaaacagg	gtcttgatca	tatgtttttt	ggaattttct	tgtagcatca	2771
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gtgtcctcct	gttttaccat	gtctttttacc	attacatttt	ttgactttgt	tttatatgtc	2831
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gttggaattt	gtaaatttac	atttttttta	aagaagagac	tgatgtgtag	atagaaaacc	2891
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ctttttttgc	ttcattagtt	tagtttttaga	atgggttttt	attttatttc	cttttttaaa	2951
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attttacttt	gcttttaaca	tttccttggg	gtgcttgac	aaatctatcc	gatgggacaa	3011
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ggagcaccgg	attctttctc	gggttctgcc	tagcatcaac	tggggccacgt	cggccttcag	3071
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cagaaaaaag	aatttgggtt ttgagctttt ttaaaaaaaa aaagacaaac actttccttg 180
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actttgagaa	ataatttaag tcaaagaatc tgctctatgc taaccaagag atagagcaca 240
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gcaaagatct	gccagcccca ggcctctacc taggggcctg gaaattcaag tattcttatt 300
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gggggaggcc	atttgtttct gattagaagc tgtctaaacc tcctactcct caactcaaag 360
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gaaaacacag	agcatacc	atg gcc aag aaa gtt gca gtg att gga gct ggt	411
		Met Ala Lys Lys Val Ala Val Ile Gly Ala Gly	
		1 5	

gtg agt ggc ctc tcc tcc	atc aaa tgc tgt gtg gat gag gac ctg gag	459
Val Ser Gly Leu Ser Ser	Ile Lys Cys Cys Val Asp Glu Asp Leu Glu	

12	17	22	27	
ccc acc tgc ttt gag aga agt gat gac att ggg gga tta tgg aag ttt				507
Pro Thr Cys Phe Glu Arg Ser Asp Asp Ile Gly Gly Leu Trp Lys Phe				
28	33	38	43	
act gaa tct tcc aaa gat ggg atg acc agg gtc tat aag tca tta gtg				555
Thr Glu Ser Ser Lys Asp Gly Met Thr Arg Val Tyr Lys Ser Leu Val				
44	49	54	59	
aca aat gtc tgt aag gaa atg tca tgt tac agt gac ttc cct ttc cac				603
Thr Asn Val Cys Lys Glu Met Ser Cys Tyr Ser Asp Phe Pro Phe His				
60	65	70	75	
gaa gat tat cct aat ttc atg aac cat gaa aaa ttt tgg gac tat ctc				651
Glu Asp Tyr Pro Asn Phe Met Asn His Glu Lys Phe Trp Asp Tyr Leu				
76	81	86	91	
caa gaa ttt gct gag cac ttt gac ctc ctg aaa tac att cag ttt aag				699
Gln Glu Phe Ala Glu His Phe Asp Leu Leu Lys Tyr Ile Gln Phe Lys				
92	97	102	107	
acc act gtg tgc agc ata acg aag cgt cca gac ttc tcc gaa act ggt				747
Thr Thr Val Cys Ser Ile Thr Lys Arg Pro Asp Phe Ser Glu Thr Gly				
108	113	118	123	
cag tgg gat gtt gtc aca gag aca gag ggc aag caa aat aga gct gtc				795
Gln Trp Asp Val Val Thr Glu Thr Glu Gly Lys Gln Asn Arg Ala Val				
124	129	134	139	
ttt gat gct gtt atg gtt tgc act gga cat ttc ctg aat ccc cat tta				843
Phe Asp Ala Val Met Val Cys Thr Gly His Phe Leu Asn Pro His Leu				
140	145	150	155	
cct ttg gaa gcc ttt cct gga att cat aag ttt aaa ggt cag atc ctg				891
Pro Leu Glu Ala Phe Pro Gly Ile His Lys Phe Lys Gly Gln Ile Leu				
156	161	166	171	
cat agt caa gag tac aag atc cca gaa ggc ttt cag ggc aaa cgc gtc				939
His Ser Gln Glu Tyr Lys Ile Pro Glu Gly Phe Gln Gly Lys Arg Val				
172	177	182	187	
ttg gtg att ggt ctt ggg aac act gga gga gac att gct gtg gaa ctc				987
Leu Val Ile Gly Leu Gly Asn Thr Gly Gly Asp Ile Ala Val Glu Leu				
188	193	198	203	
agt cga acg gca gct cag gta ctt ctc agt act aga act ggt acc tgg				1035
Ser Arg Thr Ala Ala Gln Val Leu Leu Ser Thr Arg Thr Gly Thr Trp				
204	209	214	219	
gtt ctt ggg cgc tct tca gat tgg ggc tat cct tat aat atg atg gtt				1083
Val Leu Gly Arg Ser Ser Asp Trp Gly Tyr Pro Tyr Asn Met Met Val				
220	225	230	235	
aca aga aga tgc tgt agt ttt att gca caa gtt ctg cct tca cgt ttt				1131
Thr Arg Arg Cys Cys Ser Phe Ile Ala Gln Val Leu Pro Ser Arg Phe				
236	241	246	251	

cta aac tgg att caa gaa agg aag ttg aat aag aga ttt aat cat gag	1179
Leu Asn Trp Ile Gln Glu Arg Lys Leu Asn Lys Arg Phe Asn His Glu	
252 257 262 267	
gat tat gga tta agt att acc aaa ggg aaa aaa gca aaa ttc att gtg	1227
Asp Tyr Gly Leu Ser Ile Thr Lys Gly Lys Lys Ala Lys Phe Ile Val	
268 273 278 283	
aat gat gag ctg cca aac tgt atc ctc tgt ggg gca atc act atg aaa	1275
Asn Asp Glu Leu Pro Asn Cys Ile Leu Cys Gly Ala Ile Thr Met Lys	
284 289 294 299	
acc agc gtg att gaa ttt aca gaa acc tct gct gtc ttt gaa gat ggg	1323
Thr Ser Val Ile Glu Phe Thr Glu Thr Ser Ala Val Phe Glu Asp Gly	
300 305 310 315	
aca gtg gaa gaa aac att gat gtt gtg atc ttc act aca gga tat aca	1371
Thr Val Glu Glu Asn Ile Asp Val Val Ile Phe Thr Thr Gly Tyr Thr	
316 321 326 331	
ttt tct ttt cca ttt ttt gaa gaa cct ctt aaa agc ctc tgt aca aag	1419
Phe Ser Phe Pro Phe Phe Glu Glu Pro Leu Lys Ser Leu Cys Thr Lys	
332 337 342 347	
aag ata ttt cta tac aag caa gtc ttt ccc tta aac cta gag aga gcg	1467
Lys Ile Phe Leu Tyr Lys Gln Val Phe Pro Leu Asn Leu Glu Arg Ala	
348 353 358 363	
aca tta gcc atc atc ggc ctt atc ggc ctt aaa gga tcc atc tta tca	1515
Thr Leu Ala Ile Ile Gly Leu Ile Gly Leu Lys Gly Ser Ile Leu Ser	
364 369 374 379	
ggc aca gag ctc caa gca cga tgg gtc aca aga gta ttc aaa gga ctc	1563
Gly Thr Glu Leu Gln Ala Arg Trp Val Thr Arg Val Phe Lys Gly Leu	
380 385 390 395	
tgt aag ata cct cca tcc caa aaa ttg atg atg gag gct act gaa aag	1611
Cys Lys Ile Pro Pro Ser Gln Lys Leu Met Met Glu Ala Thr Glu Lys	
396 401 406 411	
gaa cag ctc att aaa agg gga gtg ttt aaa gac acc agc aaa gac aaa	1659
Glu Gln Leu Ile Lys Arg Gly Val Phe Lys Asp Thr Ser Lys Asp Lys	
412 417 422 427	
ttt gac tac att gcc tac atg gat gat atc gct gcc tgc ata ggc aca	1707
Phe Asp Tyr Ile Ala Tyr Met Asp Asp Ile Ala Ala Cys Ile Gly Thr	
428 433 438 443	
aag ccc agc atc cca ctt ctg ttc ctc aag gat ccc aga cta gct tgg	1755
Lys Pro Ser Ile Pro Leu Leu Phe Leu Lys Asp Pro Arg Leu Ala Trp	
444 449 454 459	
gaa gtt ttc ttt gga cca tgt act cct tat cag tac cgc ctc atg ggc	1803
Glu Val Phe Phe Gly Pro Cys Thr Pro Tyr Gln Tyr Arg Leu Met Gly	
460 465 470 475	

cct gga aaa tgg gat	gga gcc aga aat gcc atc ctg acc cag tgg gac	1851
Pro Gly Lys Trp Asp	Gly Ala Arg Asn Ala Ile Leu Thr Gln Trp Asp	
476	481 486 491	

aga aca ttg aaa cct tta aaa act cga att gtc cct gat tcc tcc aag	1899
Arg Thr Leu Lys Pro Leu Lys Thr Arg Ile Val Pro Asp Ser Ser Lys	
492 497 502 507	

cct gcc tcc atg tca cat tat tta aaa gcc tgg ggg gca cct gtc cta	1947
Pro Ala Ser Met Ser His Tyr Leu Lys Ala Trp Gly Ala Pro Val Leu	
508 513 518 523	

ctt gcc tct ctt cta ctt atc tgt aaa tct tca ctt ttc ttg aaa ttg	1995
Leu Ala Ser Leu Leu Leu Ile Cys Lys Ser Ser Leu Phe Leu Lys Leu	
524 529 534 539	

gtg aga gat aaa cta cag gac aga atg tcc cct tac cta gta agt ctt	2043
Val Arg Asp Lys Leu Gln Asp Arg Met Ser Pro Tyr Leu Val Ser Leu	
540 545 550 555	

tgg cga gga tga acc tgattgttac aagggttaca ccaagtcattg ctaattctat	2098
Trp Arg Gly *	
556	

ctccaagtat cttgtgcac cctcctctgc tctccatcat aactgctatt agccaaattc	2158
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agggccagtc atctcctatc tgaattattg tattatcttc ttctttgttt tcagtaccct	2218
---	------

ctttcttgcc accctttcca atgcattctc taccctgcta cctcagtgat tattctaaaa	2278
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	atg
	Met
	1

gca ggg att tca cag aat gcc aag acc gga gac ctc cct gcc ttt ggg	163
Ala Gly Ile Ser Gln Asn Ala Lys Thr Gly Asp Leu Pro Ala Phe Gly	
2 7 12 17	

gaa tgt gtg ggg att gca tcc aag gct ctc tgt ggg ctg aca gag gct	211
Glu Cys Val Gly Ile Ala Ser Lys Ala Leu Cys Gly Leu Thr Glu Ala	

18	23	28	33	
gca gcc cag gct gca tac ttg gtt ggc atc ttt gat cca aac agc cag				259
Ala Ala Gln Ala Ala Tyr Leu Val Gly Ile Phe Asp Pro Asn Ser Gln				
34	39	44	49	
gca ggc cac cag ggc ctg gtg gac ccc atc cag ttt gcc agg gct aac				307
Ala Gly His Gln Gly Leu Val Asp Pro Ile Gln Phe Ala Arg Ala Asn				
50	55	60	65	
cag gcc atc cag atg gca tgc cag aac ttg gtg gac cct ggc agc agc				355
Gln Ala Ile Gln Met Ala Cys Gln Asn Leu Val Asp Pro Gly Ser Ser				
66	71	76	81	
cca tca cag gtc ctg tca gcc gcc aca att gtt gcc aag cac acg tca				403
Pro Ser Gln Val Leu Ser Ala Ala Thr Ile Val Ala Lys His Thr Ser				
82	87	92	97	
gcc ttg tgt aat gcc tgc cgc atc gcc tca tcc aag acg gcc aac cca				451
Ala Leu Cys Asn Ala Cys Arg Ile Ala Ser Ser Lys Thr Ala Asn Pro				
98	103	108	113	
gta gcc aag agg cac ttc gtc cag tcg gcc aag gaa gtc gcc aac agc				499
Val Ala Lys Arg His Phe Val Gln Ser Ala Lys Glu Val Ala Asn Ser				
114	119	124	129	
act gcc aac ctg gtg aag acc atc aag gcc ctg gat ggg gat ttc tct				547
Thr Ala Asn Leu Val Lys Thr Ile Lys Ala Leu Asp Gly Asp Phe Ser				
130	135	140	145	
gaa gac aac cgc aat aag tgt cgc atc gcc acc gca ccc ttg att gaa				595
Glu Asp Asn Arg Asn Lys Cys Arg Ile Ala Thr Ala Pro Leu Ile Glu				
146	151	156	161	
gct gtg gag aac ctg aca gcg ttc gcc tca aac cct gag ttt gtc agc				643
Ala Val Glu Asn Leu Thr Ala Phe Ala Ser Asn Pro Glu Phe Val Ser				
162	167	172	177	
att cct gcc cag atc agc tcc gag ggt tcc cag gca cag gaa cca atc				691
Ile Pro Ala Gln Ile Ser Ser Glu Gly Ser Gln Ala Gln Glu Pro Ile				
178	183	188	193	
ctg gtc tca gcc aag acc atg ctg gag agt tca tcg tac ctc att cgc				739
Leu Val Ser Ala Lys Thr Met Leu Glu Ser Ser Ser Tyr Leu Ile Arg				
194	199	204	209	
act gca cgc tct ctg gcc atc aac ccc aaa gac cca ccc acc tgg tct				787
Thr Ala Arg Ser Leu Ala Ile Asn Pro Lys Asp Pro Pro Thr Trp Ser				
210	215	220	225	
gta ctg gct gga cat tcc cat aca gtg tcc gac tcc atc aag agt ctc				835
Val Leu Ala Gly His Ser His Thr Val Ser Asp Ser Ile Lys Ser Leu				
226	231	236	241	
atc act tct atc agg gac aag gcc cct gga cag agg gag tgt gat tac				883
Ile Thr Ser Ile Arg Asp Lys Ala Pro Gly Gln Arg Glu Cys Asp Tyr				
242	247	252	257	

tcc atc gat ggc atc aac cgg tgc atc cgg gac atc gag cag gcc tcg	931
Ser Ile Asp Gly Ile Asn Arg Cys Ile Arg Asp Ile Glu Gln Ala Ser	
258 263 268 273	
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Leu Ala Ala Val Ser Gln Ser Leu Ala Thr Arg Asp Asp Ile Ser Val	
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Glu Ala Leu Gln Glu Gln Leu Thr Ser Val Val Gln Glu Ile Gly His	
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Leu Ile Asp Pro Ile Ala Thr Ala Ala Arg Gly Glu Ala Ala Gln Leu	
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Gly His Lys Val Thr Gln Leu Ala Ser Tyr Phe Glu Pro Leu Ile Leu	
322 327 332 337	
gcc gca gtt ggt gtg gcc tcc aag att ctt gat cat cag cag cag atg	1171
Ala Ala Val Gly Val Ala Ser Lys Ile Leu Asp His Gln Gln Gln Met	
338 343 348 353	
acg gtg ctg gac cag acc aag act ctc gca gag tct gcc ttg cag atg	1219
Thr Val Leu Asp Gln Thr Lys Thr Leu Ala Glu Ser Ala Leu Gln Met	
354 359 364 369	
ttg tat gca gcc aaa gaa ggt ggc gga aac ccc aag gca caa cac acc	1267
Leu Tyr Ala Ala Lys Glu Gly Gly Gly Asn Pro Lys Ala Gln His Thr	
370 375 380 385	
cat gac gcc atc aca gag gcc gcc cag ttg atg aag gaa gcc gtg gat	1315
His Asp Ala Ile Thr Glu Ala Ala Gln Leu Met Lys Glu Ala Val Asp	
386 391 396 401	
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Asp Ile Met Val Thr Leu Asn Glu Ala Ala Ser Glu Val Gly Leu Val	
402 407 412 417	
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Gly Gly Met Val Asp Ala Ile Ala Glu Ala Met Ser Lys Leu Asp Glu	
418 423 428 433	
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Gly Thr Pro Pro Glu Pro Lys Gly Thr Phe Val Asp Tyr Gln Thr Thr	
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Val Val Lys Tyr Ser Lys Ser Ile Ala Val Thr Ala Gln Glu Met Met	
450 455 460 465	
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Thr Lys Ser Val Thr Asn Pro Glu Glu Leu Gly Gly Leu Ala Ser Gln	
466 471 476 481	

atg acc agt gac tat	ggg cac ctg gct ttc	cag ggc cag atg gca gca	1603
Met Thr Ser Asp Tyr	Gly His Leu Ala Phe	Gln Gly Gln Met Ala Ala	
482	487	492 497	
gcc acg gcg gaa cca	gag gag atc gga ttc	cag att cgc act cgt gtg	1651
Ala Thr Ala Glu Pro	Glu Glu Ile Gly Phe	Gln Ile Arg Thr Arg Val	
498	503	508 513	
cag gac ctg ggc cac	ggc tgt atc ttc ctg	gtg cag aag gca ggg gcc	1699
Gln Asp Leu Gly His	Gly Cys Ile Phe Leu	Val Gln Lys Ala Gly Ala	
514	519	524 529	
ctc cag gtc tgc ccc	aca gac agc tac acc	aag agg gag ctg atc gaa	1747
Leu Gln Val Cys Pro	Thr Asp Ser Tyr Thr	Lys Arg Glu Leu Ile Glu	
530	535	540 545	
tgc gcc cgt gcc gtc	acg gaa aag gtc tcc	ttg gtg ctc tcg gct ctc	1795
Cys Ala Arg Ala Val	Thr Glu Lys Val Ser	Leu Val Leu Ser Ala Leu	
546	551	556 561	
cag gcc ggg aac aaa	gga acc cag gca tgc	att aca gcc gcc acc gct	1843
Gln Ala Gly Asn Lys	Gly Thr Gln Ala Cys	Ile Thr Ala Ala Thr Ala	
562	567	572 577	
gtg tct ggg atc att	gcc gac ctg gac acc	acc att atg ttt gca aca	1891
Val Ser Gly Ile Ile	Ala Asp Leu Asp Thr	Thr Ile Met Phe Ala Thr	
578	583	588 593	
gcg ggg acg ctg aat	gca gag aac agt gag	acc ttc gca gac cac agg	1939
Ala Gly Thr Leu Asn	Ala Glu Asn Ser Glu	Thr Phe Ala Asp His Arg	
594	599	604 609	
gag aac att ctc aag	acg gcc aag gcc ttg	gta gaa gac acg aaa cta	1987
Glu Asn Ile Leu Lys	Thr Ala Lys Ala Leu	Val Glu Asp Thr Lys Leu	
610	615	620 625	
ctt gtg tca gga gct	gcg tcc act cct gac	aag ctg gcc cag gcg gcc	2035
Leu Val Ser Gly Ala	Ala Ser Thr Pro Asp	Lys Leu Ala Gln Ala Ala	
626	631	636 641	
cag tcc tca gca gcc	acc atc acc cag ctc	gca gaa gtg gtc aag ctg	2083
Gln Ser Ser Ala Ala	Thr Ile Thr Gln Leu	Ala Glu Val Val Lys Leu	
642	647	652 657	
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Gly Ala Ala Ser Leu	Gly Ser Asp Asp Pro	Glu Thr Gln Val Val Leu	
658	663	668 673	
atc aat gcc atc aaa	gat gtg gcc aag gcc	ctt tct gat ctc atc agt	2179
Ile Asn Ala Ile Lys	Asp Val Ala Lys Ala	Leu Ser Asp Leu Ile Ser	
674	679	684 689	
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Ala Thr Lys Gly Ala	Ala Ser Lys Pro Val	Asp Asp Pro Ser Met Tyr	
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Gln Leu Lys Gly Ala Ala Lys Val Met Val Thr Asn Val Thr Ser Leu	
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722 727 732 737	
gcg ctt gag gcc aca att gaa tgc ata aag cag gag ctt acg gtg ttc	2371
Ala Leu Glu Ala Thr Ile Glu Cys Ile Lys Gln Glu Leu Thr Val Phe	
738 743 748 753	
cag tca aaa gac gta cct gaa aag aca tca tca cct gaa gaa tcc ata	2419
Gln Ser Lys Asp Val Pro Glu Lys Thr Ser Ser Pro Glu Glu Ser Ile	
754 759 764 769	
agg atg acg aaa ggc atc acc atg gca aca gcc aaa gcc gtg gca gct	2467
Arg Met Thr Lys Gly Ile Thr Met Ala Thr Ala Lys Ala Val Ala Ala	
770 775 780 785	
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Gly Asn Ser Cys Arg Gln Glu Asp Val Ile Ala Thr Ala Asn Leu Ser	
786 791 796 801	
cgg aaa gcc gtg tca gat atg ttg acg gct tgc aag caa gca tcc ttc	2563
Arg Lys Ala Val Ser Asp Met Leu Thr Ala Cys Lys Gln Ala Ser Phe	
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His Pro Asp Val Ser Asp Glu Val Arg Thr Arg Ala Leu Arg Phe Gly	
818 823 828 833	
acg gag tgc acc ctt ggc tac ttg gac ctc ctg gag cac gtc ttg gtg	2659
Thr Glu Cys Thr Leu Gly Tyr Leu Asp Leu Leu Glu His Val Leu Val	
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Ile Leu Gln Lys Pro Thr Pro Glu Phe Lys Gln Gln Leu Ala Ala Phe	
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Ser Lys Arg Val Ala Gly Ala Val Thr Glu Leu Ile Gln Ala Ala Glu	
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882 887 892 897	
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Ala Glu Thr Glu Leu Leu Gly Ala Ala Ala Ser Ile Glu Ala Ala Ala	
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Lys Lys Leu Glu Gln Leu Lys Pro Arg Ala Lys Pro Lys Gln Ala Asp	
914 919 924 929	
gag acc ctg gac ttt gag gaa cag atc ttg gaa gct gct aaa tcc att	2947
Glu Thr Leu Asp Phe Glu Glu Gln Ile Leu Glu Ala Ala Lys Ser Ile	

930	935	940	945	
gct gct gcc aca agc gct ctg gtc aaa tgc gct tca gca gcc cag agg	gct ctg gtc aaa tgc gct tca gca gcc cag agg	gct ctg gtc aaa tgc gct tca gca gcc cag agg	gct ctg gtc aaa tgc gct tca gca gcc cag agg	2995
Ala Ala Ala Thr Ser Ala Leu Val Lys Ser Ala Ser Ala Ala Gln Arg	Ala Leu Val Lys Ser Ala Ser Ala Ala Gln Arg	Ala Leu Val Lys Ser Ala Ser Ala Ala Gln Arg	Ala Leu Val Lys Ser Ala Ser Ala Ala Gln Arg	
946	951	956	961	
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Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro Ala Asn Ala Ala	Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro Ala Asn Ala Ala	Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro Ala Asn Ala Ala	Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro Ala Asn Ala Ala	
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Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala Ala Arg Met Val	Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala Ala Arg Met Val	Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala Ala Arg Met Val	Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala Ala Arg Met Val	
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Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala Lys Gln Val Ala	Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala Lys Gln Val Ala	Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala Lys Gln Val Ala	Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala Lys Gln Val Ala	
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Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val Lys Ala Asp Gln	Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val Lys Ala Asp Gln	Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val Lys Ala Asp Gln	Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val Lys Ala Asp Gln	
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Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly Asn Ala Val Lys	Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly Asn Ala Val Lys	Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly Asn Ala Val Lys	Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly Asn Ala Val Lys	
1042	1047	1052	1057	
aga gcc tca gac aat ctt gtc cgt gca gcc cag aag gca gct ttt ggc	aga gcc tca gac aat ctt gtc cgt gca gcc cag aag gca gct ttt ggc	aga gcc tca gac aat ctt gtc cgt gca gcc cag aag gca gct ttt ggc	aga gcc tca gac aat ctt gtc cgt gca gcc cag aag gca gct ttt ggc	3331
Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys Ala Ala Phe Gly	Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys Ala Ala Phe Gly	Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys Ala Ala Phe Gly	Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys Ala Ala Phe Gly	
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Lys Ala Asp Asp Asp Val Val Val Lys Thr Lys Phe Val Gly Gly	Lys Ala Asp Asp Asp Val Val Val Lys Thr Lys Phe Val Gly Gly	Lys Ala Asp Asp Asp Val Val Val Lys Thr Lys Phe Val Gly Gly	Lys Ala Asp Asp Asp Val Val Val Lys Thr Lys Phe Val Gly Gly	
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Lys Ala Ala Ala Leu Asn Leu Ser Ala Leu His Ser Pro Ala His Arg
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Pro Pro Gly Phe Ser Val Ala Gln Lys Pro Phe Gly Ala Thr Tyr Val
23 28 33 38
tgg agc agc atc ata aac act ctt caa aca caa gtg gaa gtg aaa aaa 197
Trp Ser Ser Ile Ile Asn Thr Leu Gln Thr Gln Val Glu Val Lys Lys
39 44 49 54
cga agg cac cgt tta aaa cga cat aat gac tgc ttt gtt ggt tca gaa 245
Arg Arg His Arg Leu Lys Arg His Asn Asp Cys Phe Val Gly Ser Glu
55 60 65 70
gct gtg gat gtc att ttt tct cac cta att cag aat aag tat ttt ggt 293
Ala Val Asp Val Ile Phe Ser His Leu Ile Gln Asn Lys Tyr Phe Gly
71 76 81 86
gat gta gat att cct cga gcc aaa gtg gtg aga gtg tgt caa gcg ctt 341
Asp Val Asp Ile Pro Arg Ala Lys Val Val Arg Val Cys Gln Ala Leu
87 92 97 102
atg gac tac aaa gta ttt gaa gca gtt cca acc aaa gtc ttt gga aaa 389

Met Asp Tyr Lys Val Phe Glu Ala Val Pro Thr Lys Val Phe Gly Lys	
103 108 113 118	
gac aaa aaa cct aca ttt gaa gat agt agt tgc agc ctt tat aga ttc	437
Asp Lys Lys Pro Thr Phe Glu Asp Ser Ser Cys Ser Leu Tyr Arg Phe	
119 124 129 134	
acc aca ata cct aac caa gac agt cag tta ggc aaa gag aac aaa cta	485
Thr Thr Ile Pro Asn Gln Asp Ser Gln Leu Gly Lys Glu Asn Lys Leu	
135 140 145 150	
tat tca cct gcc agg tat gca gat gca tta ttt aag tca tcc gat atc	533
Tyr Ser Pro Ala Arg Tyr Ala Asp Ala Leu Phe Lys Ser Ser Asp Ile	
151 156 161 166	
aga tca gcc agt tta gag gac ctg tgg gaa aat ctg agt tta aag cct	581
Arg Ser Ala Ser Leu Glu Asp Leu Trp Glu Asn Leu Ser Leu Lys Pro	
167 172 177 182	
gcc aac tcc cct cat gta aat atc tct aca acc ttg tct cca caa gtt	629
Ala Asn Ser Pro His Val Asn Ile Ser Thr Thr Leu Ser Pro Gln Val	
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Ile Asn Glu Val Trp Gln Glu Glu Thr Ile Gly Arg Leu Leu Gln Leu	
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Val Asp Leu Pro Leu Leu Asp Ser Leu Leu Lys Gln Gln Glu Ala Val	
215 220 225 230	
cct aaa att oct caa cct aag agg cag tcc acc atg gtc aac agc agt	773
Pro Lys Ile Pro Gln Pro Lys Arg Gln Ser Thr Met Val Asn Ser Ser	
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Asn Tyr Leu Asp Arg Gly Ile Leu Lys Ala Tyr Ser Asp Ser Gln Glu	
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Asp Glu Trp Leu Ser Ala Ala Ile Asp Cys Leu Glu Tyr Leu Pro Asp	
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Gln Met Val Val Glu Ile Ser Arg Ser Phe Pro Glu Gln Pro Asp Arg	
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Ser Ser Arg Glu Pro Leu Leu Asn His Leu Ser Asp Val His Asn Gly	
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Thr Gln Leu Leu Leu	Lys Leu Leu Asp Phe	Gln Asn Arg Glu Glu Phe		
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Arg Arg Leu Leu Tyr	Phe Met Ala Val Ala	Ala Asn Pro Ser Glu Phe		
359	364	369	374	
aaa tta cag aaa gaa	agt gac aac cga atg	gtt gtg aaa agg ata ttc	1205	
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375	380	385	390	
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Ser Lys Ala Ile Val	Asp Asn Lys Asn Leu	Ser Lys Gly Lys Thr Asp		
391	396	401	406	
ctt ctg gta ctc ttt	tta atg gat cat cag	aaa gat gtt ttt aag att	1301	
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407	412	417	422	
cct gga act cta cat	aaa att gta agt gtt	aag ctt atg gcc ata cag	1349	
Pro Gly Thr Leu His	Lys Ile Val Ser Val	Lys Leu Met Ala Ile Gln		
423	428	433	438	
aac gga aga gat cca	aat aga gat gca gga	tat att tat tgc cag aga	1397	
Asn Gly Arg Asp Pro	Asn Arg Asp Ala Gly	Tyr Ile Tyr Cys Gln Arg		
439	444	449	454	
att gat caa cgt gac	tat tcc aac aat aca	gag aag aca acc aaa gat	1445	
Ile Asp Gln Arg Asp	Tyr Ser Asn Asn Thr	Glu Lys Thr Thr Lys Asp		
455	460	465	470	
gag ctg ttg aat tta	cta aaa act ctt gat	gag gat tca aaa ctt tct	1493	
Glu Leu Leu Asn Leu	Leu Lys Thr Leu Asp	Glu Asp Ser Lys Leu Ser		
471	476	481	486	
gcc aaa gag aag aaa	aaa ttg cta ggt caa	ttc tat aag tgt cac cca	1541	
Ala Lys Glu Lys Lys	Lys Leu Leu Gly Gln	Phe Tyr Lys Cys His Pro		
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503	508			
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Met Phe Gly Cys Leu Val Ala Gly Arg Leu Val
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caa aca gct gca cag caa gtg gca gag gat aaa ttt gtt ttt gac tta 459
 Gln Thr Ala Ala Gln Gln Val Ala Glu Asp Lys Phe Val Phe Asp Leu
 12 17 22 27

cct gat tat gaa agt atc aac cat gtt gtg gtt ttt atg ctg gga aca 507
 Pro Asp Tyr Glu Ser Ile Asn His Val Val Val Phe Met Leu Gly Thr
 28 33 38 43

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 Ile Pro Phe Pro Glu Gly Met Gly Gly Ser Val Tyr Phe Ser Tyr Pro
 44 49 54 59

gat tca aat gga atg cca gta tgg caa ctc cta gga ttt gtc acg aat 603
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 60 65 70 75

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 76 81 86 91

gga agc caa cat cct ttt gga gcc atg aat att gtc cga act cca tct 699
 Gly Ser Gln His Pro Phe Gly Ala Met Asn Ile Val Arg Thr Pro Ser
 92 97 102 107

gtt gct cag att gga att tca gtg gaa tta tta gac agt atg gct cag 747
 Val Ala Gln Ile Gly Ile Ser Val Glu Leu Leu Asp Ser Met Ala Gln
 108 113 118 123

cag act cct gta ggt aat gct gct gta tcc tca gtt gac tca ttc act 795
 Gln Thr Pro Val Gly Asn Ala Ala Val Ser Ser Val Asp Ser Phe Thr
 124 129 134 139

cag ttc aca caa aag atg ttg gac aat ttc tac aat ttt gct tca tca 843
 Gln Phe Thr Gln Lys Met Leu Asp Asn Phe Tyr Asn Phe Ala Ser Ser
 140 145 150 155

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156 161 166 171

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Ile Pro Ala Asn Val Val Leu Lys Trp Tyr Glu Asn Phe Gln Arg Arg
172 177 182 187

cta gca cag aac cct ctc ttt tgg aaa aca taa tttgaata aaataatttt 990
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Gly Pro Gly Pro Trp Gly Ser Gly Val Gly Gly Gly Thr Val Arg
14 19 24 29

cta ctc ttg atc ctc tcc ggc tgc ttg gtc tac ggc aca gct gaa act 206
Leu Leu Leu Ile Leu Ser Gly Cys Leu Val Tyr Gly Thr Ala Glu Thr
30 35 40 45

gat gta aat gtg gtc atg ctt cag gaa tcc caa gtt tgt gaa aag cgt 254
Asp Val Asn Val Val Met Leu Gln Glu Ser Gln Val Cys Glu Lys Arg
46 51 56 61

gcc agc caa caa ttc tgt tac aca aat gtg ctt atc cca caa tgg cat 302
Ala Ser Gln Gln Phe Cys Tyr Thr Asn Val Leu Ile Pro Gln Trp His
62 67 72 77

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Asp Ile Trp Thr Arg Ile Gln Ile Arg Val Asn Ser Ser Arg Leu Val
78 83 88 93

cga gtc acc cag gtg gag aat gag gag aaa ctg aag gag cta gag cag 398
Arg Val Thr Gln Val Glu Asn Glu Glu Lys Leu Lys Glu Leu Glu Gln
94 99 104 109

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Val Glu Ile Ile Glu Lys Asp Thr Lys Tyr Ser Val Ile Val Ile Arg	
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Val Gly Gly Trp Ser Phe Ser Leu Tyr Leu Ile Gln Leu Val Phe Lys	
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254 259 264 269	
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Pro Leu Glu Asn Glu Arg Ser Ile Asn Leu Leu Thr Trp Thr Leu Gln	
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Leu Met Gly Leu Cys Phe Met Tyr Ser Gly Ile Gln Ile Pro His Ile	
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302 307 312 317	
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Pro Asn Glu Val Ser Val His Glu Gln Glu Tyr Gly Leu Gly Ser Ile	
398 403 408 413	
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His Val Arg Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly	
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Gly Gln Asp Thr Phe Met Glu Asn Tyr Phe Thr Ser Gln Arg Asp Asn	
126 131 136 141	
atc ttc cga aat gtg gag gtt ctg att tat gtc ttt gat gtg gag agc	1080
Ile Phe Arg Asn Val Glu Val Leu Ile Tyr Val Phe Asp Val Glu Ser	
142 147 152 157	
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Arg Glu Leu Glu Lys Asp Met His Tyr Tyr Gln Ser Cys Leu Glu Ala	
158 163 168 173	
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Ile Leu Gln Asn Ser Pro Asp Ala Lys Ile Phe Cys Leu Val His Lys	
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Glu Glu Asp Leu Arg Arg Leu Ser Arg Pro Leu Glu Cys Ser Cys Phe	
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Arg Thr Ser Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile	
222 227 232 237	
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Val Tyr Gln Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg	
238 243 248 253	
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Asn Phe Ala Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg	
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Ala Thr Phe Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp	
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Ala His Arg Phe Glu Lys Ile Ser Asn Ile Ile Lys Gln Phe Lys Leu	
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Ser Cys Ser Lys Leu Ala Ala Ser Phe Gln Ser Met Glu Val Arg Asn	
302 307 312 317	
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Ser Asn Phe Ala Ala Phe Ile Asp Ile Phe Thr Ser Asn Thr Tyr Val	

318	323	328	333	
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Met Val Val Met Ser Asp Pro Ser Ile Pro Ser Ala Ala Thr Leu Ile				
334	339	344	349	
aac atc cgc aat gcc agg aaa cac ttt gaa aag ctg gaa aga gtg gat				1704
Asn Ile Arg Asn Ala Arg Lys His Phe Glu Lys Leu Glu Arg Val Asp				
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tccgcttagt gcctacggca tgggtcagct ctttctgcc cctccgcctt cgcggtcctc	240
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tggggacgaa ccctaacc acctctcttt tctgtcatt ctccaactct tactttgtac	360
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 Met Glu Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu
 1 5 10
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 Met Gly Lys Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe
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 gca aat tat att gcc aga gac aca cgt cgc ctt ggc gca aca att gat 840
 Ala Asn Tyr Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Asp
 62 67 72 77
 gta gaa cat tct cat gtt cga ttt ctg gga aac ctg gta ttg aac ctg 888
 Val Glu His Ser His Val Arg Phe Leu Gly Asn Leu Val Leu Asn Leu
 78 83 88 93
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 Gln Arg Asp Asn Ile Phe Arg Asn Val Glu Val Leu Ile Tyr Val Phe
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 142 147 152 157
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 158 163 168 173
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 Phe Lys Glu Arg Glu Glu Asp Leu Arg Arg Leu Ser Arg Pro Leu Glu
 174 179 184 189
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 Cys Ser Cys Phe Arg Thr Ser Ile Trp Asp Glu Thr Leu Tyr Lys Ala
 190 195 200 205
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Met Asn Leu Arg Asn Phe Ala Glu Ile Ile Glu Ala Asp Glu Val Leu	
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254 259 264 269	
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Gln Phe Lys Leu Ser Cys Ser Lys Leu Ala Ala Ser Phe Gln Ser Met	
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286 291 296 301	
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Asn Thr Tyr Val Met Val Val Met Ser Asp Pro Ser Ile Pro Ser Ala	
302 307 312 317	
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Ala Thr Leu Ile Asn Ile Arg Asn Ala Arg Lys His Phe Glu Lys Leu	
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Glu Arg Val Asp Gly Pro Lys Gln Cys Leu Leu Met Arg *	
334 339 344	
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 <222> (610) .. (1773)

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tgttgcgca	atg gaa gaa tct gac tct gag aaa acg acg gag aaa gaa					648
	Met Glu Glu Ser Asp Ser Glu Lys Thr Thr Glu Lys Glu					
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Asn Leu Gly Pro Arg Met Asp Pro Pro Leu Gly Glu Pro Glu Gly Ser						
14 19 24 29						
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Leu Gly Trp Val Leu Pro Asn Thr Ala Met Lys Lys Lys Val Arg Arg						
30 35 40 45						
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Val Arg Tyr Val Lys Thr Met Lys Lys Lys Val Leu Leu Met Gly Lys						
46 51 56 61						
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Ser Gly Ser Gly Lys Thr Ser Met Arg Ser Ile Ile Phe Ala Asn Tyr						
62 67 72 77						
att gcc aga gac aca cgt cgc ctt ggc gca aca ata cta gac cgt ata						888
Ile Ala Arg Asp Thr Arg Arg Leu Gly Ala Thr Ile Leu Asp Arg Ile						
78 83 88 93						
cat agt ctt caa att aat agc agt ttg agc acc tac tct ctc gta gac						936
His Ser Leu Gln Ile Asn Ser Ser Leu Ser Thr Tyr Ser Leu Val Asp						
94 99 104 109						
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Ser Val Gly Asn Thr Lys Thr Phe Asp Val Glu His Ser His Val Arg						
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Phe Leu Gly Asn Leu Val Leu Asn Leu Trp Asp Cys Gly Gly Gln Asp	
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142 147 152 157	
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Asn Val Glu Val Leu Ile Tyr Val Phe Asp Val Glu Ser Arg Glu Leu	
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Glu Lys Asp Met His Tyr Tyr Gln Ser Cys Leu Glu Ala Ile Leu Gln	
174 179 184 189	
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206 211 216 221	
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Leu Arg Arg Leu Ser Cys Pro Leu Glu Cys Ser Cys Phe Arg Thr Ser	
222 227 232 237	
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Ile Trp Asp Glu Thr Leu Tyr Lys Ala Trp Ser Ser Ile Val Tyr Gln	
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Leu Ile Pro Asn Val Gln Gln Leu Glu Met Asn Leu Arg Asn Phe Ala	
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gaa att atc gaa gct gat gaa gta ctt ctt ttt gag aga gct act ttt	1464
Glu Ile Ile Glu Ala Asp Glu Val Leu Leu Phe Glu Arg Ala Thr Phe	
270 275 280 285	
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Leu Val Ile Ser His Tyr Gln Cys Lys Glu Gln Arg Asp Ala His Arg	
286 291 296 301	
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Lys Leu Ala Ala Ser Phe Gln Ser Met Glu Val Arg Asn Ser Asn Phe	
318 323 328 333	
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Ala Ala Phe Ile Asp Ile Phe Thr Ser Asn Thr Tyr Val Met Val Val	
334 339 344 349	
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Met Ser Asp Pro Ser Ile Pro Ser Ala Ala Thr Leu Ile Asn Ile Arg
350 355 360 365

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Asn Ala Arg Lys His Phe Glu Lys Leu Glu Arg Val Asp Gly Pro Lys
366 371 376 381

cag tgt ctt ctc atg cgc taa ac attgatgaat attgtttcac acaaaaatta 1805
Gln Cys Leu Leu Met Arg *
382 387

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taaatagcca ttgaggagtt agaagatgaa ttgttcatga agtcgggtgtt acataaaagt 1985

aggatgatatg taagttttct gataacaagg ttctaatagt gtttaaagt actggttaacc 2045

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Thr Val Val Leu Gln Asp Ala Ser Met Glu Ala Gln Pro Ala Glu Thr
17 22 27 32

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Leu Pro Glu Gly Pro Gln Gln Asp Leu Pro Pro Glu Ala Ser Ala Ala
33 38 43 48

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49 54 59 64

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Asn Ser Phe His Lys	Phe Pro Tyr Pro Thr	Lys Ala Glu Leu Cys Tyr		
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aca gcc caa agg ctg	aag cag ggg atc agc	tgg tcc cct gag gag att		1164
Thr Ala Gln Arg Leu	Lys Gln Gly Ile Ser	Trp Ser Pro Glu Glu Ile		
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106 111 116 121

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Gly Lys Leu Tyr Ala Met Lys Val Leu Arg Lys Ala Ala Leu Val Gln
122 127 132 137

cgc gcc aag acg cag gag cac acg cgc acc gag cgc tcg gtg ctg gag 604
Arg Ala Lys Thr Gln Glu His Thr Arg Thr Glu Arg Ser Val Leu Glu

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Thr Asp Ala Lys Leu His Leu Ile Leu Asp Tyr Val Ser Gly Gly Glu				
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Met Phe Thr His Leu Tyr Gln Arg Gln Tyr Phe Lys Glu Ala Glu Val				
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Arg Val Tyr Gly Gly Glu Ile Val Leu Ala Leu Glu His Leu His Lys				
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tcc gag ggc cac att gtc ctc acg gac ttc ggg ctg agc aag gag ttc				892
Ser Glu Gly His Ile Val Leu Thr Asp Phe Gly Leu Ser Lys Glu Phe				
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Tyr Met Ala Pro Glu Ile Ile Arg Ser Lys Thr Gly His Gly Lys Ala				
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Ser Arg Arg Ile Leu Lys Cys Ser Pro Pro Phe Pro Pro Arg Ile Gly				
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Pro Phe Phe Gln Gly Leu Asp Trp Val Ala Leu Ala Ala Arg Lys Ile				
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Ser Pro Pro Pro Gly Asp Pro Arg Ile Phe Gln Gly Tyr Ser Phe Val	
410 415 420 425	
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Ala Pro Ser Ile Leu Phe Asp His Asn Asn Ala Val Met Thr Asp Gly	
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Arg Cys Arg Gln Arg Gln Ser Gly Gln Glu Phe Ala Val Lys Ile Leu	
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Ser Arg Arg Leu Glu Ala Asn Thr Gln Arg Glu Val Ala Ala Leu Arg	
506 511 516 521	
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Leu Cys Gln Ser His Pro Asn Val Val Asn Leu His Glu Val His His	
522 527 532 537	
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Asp Gln Leu His Thr Tyr Leu Val Leu Glu Leu Leu Arg Gly Gly Glu	
538 543 548 553	
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Leu Leu Glu His Ile Arg Lys Lys Arg His Phe Ser Glu Ser Glu Ala	
554 559 564 569	
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Ser Gln Ile Leu Arg Ser Leu Val Ser Ala Val Ser Phe Met His Glu	
570 575 580 585	
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586 591 596 601	

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602 607 612 617

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762 767 772 777

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794 799 804 809

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Ala Pro Ala Asn Pro Gly Arg Ala Pro Val Ala Ser Lys Gly Ala Pro
810 815 820 825

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Met Asn Lys Ser Arg Trp Gln
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Val Arg Ile Leu Gln	Asp Glu Gln Tyr Leu	Met Ala Ser Asp Met Ala		
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392	397	402	407	
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Val Val Leu Gln Thr Asp Pro Leu Pro Pro Ala Arg Phe Gly Val Ser	
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Lys Glu Lys Thr Thr Ser Thr Gly Leu His Val Trp Trp Thr Pro Ser	
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Gln Lys Ile Gln Gly Val Gln Ile Gln Glu Ser Thr Ser Trp Asn Glu	
152 157 162 167	
tac act ttt ttc aat ctc act gct ggt agt aaa tac aat att gcc atc	579
Tyr Thr Phe Phe Asn Leu Thr Ala Gly Ser Lys Tyr Asn Ile Ala Ile	
168 173 178 183	
aca gct gtt tct gga gga aaa cgt tct ttt tca gtt tat acc aat gga	627
Thr Ala Val Ser Gly Gly Lys Arg Ser Phe Ser Val Tyr Thr Asn Gly	
184 189 194 199	
tca aca gtg cca tct cca gtg aaa gat att ggt att tcc aca aaa gcc	675
Ser Thr Val Pro Ser Pro Val Lys Asp Ile Gly Ile Ser Thr Lys Ala	
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aat tct ctc ctg att tcc tgg tcc cat ggt tct ggg aat gtg gaa cga	723
Asn Ser Leu Leu Ile Ser Trp Ser His Gly Ser Gly Asn Val Glu Arg	

216	221	226	231	
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Tyr Arg Leu Met Leu	Met Asp Lys Gly Ile	Leu Val His Gly Gly Val		
232	237	242	247	
gtg gac aaa cat gct	act tcc tat gct ttt	cac ggg ctg tcc cct ggc		819
Val Asp Lys His Ala	Thr Ser Tyr Ala Phe	His Gly Leu Ser Pro Gly		
248	253	258	263	
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Tyr Leu Tyr Asn Leu	Thr Val Met Thr Glu	Ala Ala Gly Leu Gln Asn		
264	269	274	279	
tac agg tgg aaa cta	gtc agg aca gcc ccc	atg gaa gtc tca aat ctg		915
Tyr Arg Trp Lys Leu	Val Arg Thr Ala Pro	Met Glu Val Ser Asn Leu		
280	285	290	295	
aag gtg aca aat gat	ggc agt ttg acc tct	cta aaa gtc aaa tgg caa		963
Lys Val Thr Asn Asp	Gly Ser Leu Thr Ser	Leu Lys Val Lys Trp Gln		
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Arg Pro Pro Gly Asn	Val Asp Ser Tyr Asn	Ile Thr Leu Ser His Lys		
312	317	322	327	
ggg acc atc aag gaa	tcc aga gta tta gca	cct tgg att act gaa act		1059
Gly Thr Ile Lys Glu	Ser Arg Val Leu Ala	Pro Trp Ile Thr Glu Thr		
328	333	338	343	
cac ttt aaa gag tta	gtc ccc ggt cga ctt	tat caa gtt act gtc agc		1107
His Phe Lys Glu Leu	Val Pro Gly Arg Leu	Tyr Gln Val Thr Val Ser		
344	349	354	359	
tgt gtc tct ggt gaa	ctg tct gct cag aag	atg gca gtg ggc aga aca		1155
Cys Val Ser Gly Glu	Leu Ser Ala Gln Lys	Met Ala Val Gly Arg Thr		
360	365	370	375	
ttt cca gac aaa gtt	gca aac ctg gag gca	aac aat aat ggc agg atg		1203
Phe Pro Asp Lys Val	Ala Asn Leu Glu Ala	Asn Asn Asn Gly Arg Met		
376	381	386	391	
agg tct ctt gta gtg	agc tgg tgc ccc cct	gct gga gac tgg gag cag		1251
Arg Ser Leu Val Val	Ser Trp Ser Pro Pro	Ala Gly Asp Trp Glu Gln		
392	397	402	407	
tat cgg atc cta ctc	ttc aat gat tct gtg	gtg ctg ctc aac atc act		1299
Tyr Arg Ile Leu Leu	Phe Asn Asp Ser Val	Val Leu Leu Asn Ile Thr		
408	413	418	423	
gtg gga aag gaa gaa	aca cag tat gtc atg	gat ggc acg ggg ctc gta		1347
Val Gly Lys Glu Glu	Thr Gln Tyr Val Met	Asp Gly Thr Gly Leu Val		
424	429	434	439	
ccg gga aga cag tat	gag gtg gaa gtc att	gtt gag agt gga aat ttg		1395
Pro Gly Arg Gln Tyr	Glu Val Glu Val Ile	Val Glu Ser Gly Asn Leu		
440	445	450	455	

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Lys Asn Ser Glu Arg Cys Gln Gly Arg Thr Val Pro Leu Ala Val Leu	
456 461 466 471	
cag ctt cgt gtc aaa cat gcc aat gaa acc tca ctg agt atc atg tgg	1491
Gln Leu Arg Val Lys His Ala Asn Glu Thr Ser Leu Ser Ile Met Trp	
472 477 482 487	
cag acc cct gta gca gaa tgg gag aaa tac atc att tcc cta gct gac	1539
Gln Thr Pro Val Ala Glu Trp Glu Lys Tyr Ile Ile Ser Leu Ala Asp	
488 493 498 503	
aga gac ctc tta ctg atc cac aag tca ctc tcc aaa gat gcc aaa gaa	1587
Arg Asp Leu Leu Leu Ile His Lys Ser Leu Ser Lys Asp Ala Lys Glu	
504 509 514 519	
ttc act ttt act gac ctg gtg cct gga cga aaa tac atg gct aca gtc	1635
Phe Thr Phe Thr Asp Leu Val Pro Gly Arg Lys Tyr Met Ala Thr Val	
520 525 530 535	
acc agt att agt gga gac tta aaa aat tcc tct tca gta aaa gga aga	1683
Thr Ser Ile Ser Gly Asp Leu Lys Asn Ser Ser Ser Val Lys Gly Arg	
536 541 546 551	
aca gtg cct gcc caa gtg act gac ttg cat gtg gcc aac caa gga atg	1731
Thr Val Pro Ala Gln Val Thr Asp Leu His Val Ala Asn Gln Gly Met	
552 557 562 567	
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Thr Ser Ser Leu Phe Thr Asn Trp Thr Gln Ala Gln Gly Asp Val Glu	
568 573 578 583	
ttt tac caa gtc tta ctg atc cat gaa aat gtg gtc att aaa aat gaa	1827
Phe Tyr Gln Val Leu Leu Ile His Glu Asn Val Val Ile Lys Asn Glu	
584 589 594 599	
agc atc tcc agt gag acc agc aga tac agc ttc cac tct ctc aag tcc	1875
Ser Ile Ser Ser Glu Thr Ser Arg Tyr Ser Phe His Ser Leu Lys Ser	
600 605 610 615	
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Gly Ser Leu Tyr Ser Val Val Val Thr Thr Val Ser Gly Gly Ile Ser	
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Ser Arg Gln Val Val Val Glu Gly Arg Thr Val Pro Ser Ser Val Ser	
632 637 642 647	
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648 653 658 663	
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Trp Leu Leu Ala Pro Gly Asp Val Asp Asn Tyr Glu Val Thr Leu Ser	
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His Asp Gly Lys Val Val Gln Ser Leu Val Ile Ala Lys Ser Val Arg	
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gaa tgt tcc ttc agc tcc ctc acc cca ggc cgc ctc tac acc gtg acc	2163
Glu Cys Ser Phe Ser Ser Leu Thr Pro Gly Arg Leu Tyr Thr Val Thr	
696 701 706 711	
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Ile Thr Thr Arg Ser Gly Lys Tyr Glu Asn His Ser Phe Ser Gln Glu	
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cgg aca gtg cct gac aaa gtc cag gga gtc agt gtt agc aac tca gcc	2259
Arg Thr Val Pro Asp Lys Val Gln Gly Val Ser Val Ser Asn Ser Ala	
728 733 738 743	
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Arg Ser Asp Tyr Leu Arg Val Ser Trp Val His Ala Thr Gly Asp Phe	
744 749 754 759	
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Asp His Tyr Glu Val Thr Ile Lys Asn Lys Asn Asn Phe Ile Gln Thr	
760 765 770 775	
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Lys Ser Ile Pro Lys Ser Glu Asn Glu Cys Val Phe Val Gln Leu Val	
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Ser Gly Ala Asn Gly Asp Val Asp Gln Tyr Glu Ile Gln Leu Leu Phe	
840 845 850 855	
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Asn Asp Met Lys Val Phe Pro Pro Phe His Leu Val Asn Thr Ala Thr	
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Glu Tyr Arg Phe Thr Ser Leu Thr Pro Gly Arg Gln Tyr Lys Ile Leu	
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Val Leu Thr Ile Ser Gly Asp Val Gln Gln Ser Ala Phe Ile Glu Gly	
888 893 898 903	
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3507
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4083
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1128	1133	1138	1143	
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Phe Asn Trp Ser Pro Ala Ser Gly Asp Phe Asp Phe Tyr Glu Leu Ile				
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Tyr Gly Leu Arg Pro Gly Arg Ser Tyr Gln Phe Asn Val Lys Thr Val				
1320	1325	1330	1335	
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Ser Gly Asp Ser Trp Lys Thr Tyr Ser Lys Pro Ile Phe Gly Ser Val				
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Gly Tyr Ser Ile Glu Cys Arg Lys Met Asp Thr Gln Glu Val Glu Phe	
1384 1389 1394 1399	
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Ser Arg Lys Leu Glu Lys Glu Lys Ser Leu Leu Asn Ile Met Met Leu	
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Val Pro His Lys Arg Tyr Leu Val Ser Ile Lys Val Gln Ser Ala Gly	
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1432 1437 1442 1447	
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Pro Pro Pro Pro Pro Pro His Ile Arg Val Asn Glu Lys Asp Val Leu	
1448 1453 1458 1463	
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1480 1485 1490 1495	
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Asp Gly Ser Asp Glu Leu Lys Pro Glu Gln Gln His Pro Leu Pro Ser	
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Tyr Leu Glu Tyr Arg His Asn Ala Ser Ile Arg Val Tyr Gln Thr Asn	
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Ser Lys Glu Tyr Glu Glu Leu Lys Asp Val Gly Arg Asn Gln Ser Cys	
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Asp Ile Ala Leu Leu Pro Glu Asn Arg Gly Lys Asn Arg Tyr Asn Asn	
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Ile Leu Pro Tyr Asp Ala Thr Arg Val Lys Leu Ser Asn Val Asp Asp	
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Met Val Thr Gln Cys Val Glu Lys Gly Arg Val Lys Cys Asp His Tyr	
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gaacatgaag agatgcatcc ataaatccca ctagcaataa tgtgctcctc tgatcttagt	180
gatattcact ttttaagtgat gccataaact attgtaataa tgctgtattt atgacagcat	240
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catttactaa tgatatcctt agttttatag gcaccagtca cagatcaacc cgcgtccgcc	360
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Met Ala Ala Gln Tyr Gly Ser Met	
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Ser Phe Asn Pro Ser Thr Pro Gly Ala Ser Tyr Gly Pro Gly Arg Gln	
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Glu Pro Arg Asn Ser Gln Leu Arg Ile Val Leu Val Gly Lys Thr Gly	
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Ala Gly Lys Ser Ala Thr Gly Asn Ser Ile Leu Gly Arg Lys Val Phe	
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His Ser Gly Thr Ala Ala Lys Ser Ile Thr Lys Lys Cys Glu Lys Arg	
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Ser Ser Ser Trp Lys Glu Thr Glu Leu Val Val Val Asp Thr Pro Gly	
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Ile Phe Asp Thr Glu Val Pro Asn Ala Glu Thr Ser Lys Glu Ile Ile	
89 94 99 104	
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Arg Cys Ile Leu Leu Thr Ser Pro Gly Pro His Ala Leu Leu Leu Val	

105	110	115	120	
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Val Pro Leu Gly Arg	Tyr Thr Glu Glu Glu	His Lys Ala Thr Glu Lys		
121	126	131	136	
atc ctg aaa atg ttt	gga gag agg gct aga	agt ttc atg att ctc ata	904	
Ile Leu Lys Met Phe	Gly Glu Arg Ala Arg	Ser Phe Met Ile Leu Ile		
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Phe Thr Arg Lys Asp	Asp Leu Gly Asp Thr	Asn Leu His Asp Tyr Leu		
153	158	163	168	
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169	174	179	184	
cgc tac tgt gcg tta	aac aac aag gca aca	ggc gct gag cag gag gcc	1048	
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Gln Arg Ala Gln Leu	Leu Gly Leu Ile Gln	Arg Val Val Arg Glu Asn		
201	206	211	216	
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Lys Glu Gly Cys Tyr	Thr Asn Arg Met Tyr	Gln Arg Ala Glu Glu Glu		
217	222	227	232	
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Ile Gln Lys Gln Thr	Gln Ala Met Gln Glu	Leu His Arg Val Glu Leu		
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Ala Arg Thr Glu Val	Glu Ser Lys Asp Gly	Ile Leu Glu Leu Ile Met		
297	302	307	312	
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Thr Ala Leu Gln Ile	Ala Ser Phe Ile Leu	Leu Arg Leu Phe Ala Glu		
313	318	323	328	
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Asp *				
329				

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 atg cca ctc cga att cat gtg cta ctt ggc cta gct atc act aca cta 288
 Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile Thr Thr Leu
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 gta caa gct gta gat aaa aaa gtg gat tgt cca cgg tta tgt acg tgt 336
 Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys
 17 22 27 32
 gaa atc agg cct tgg ttt aca ccc aga tcc att tat atg gaa gca tct 384
 Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser
 33 38 43 48
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 Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu
 49 54 59 64
 cca gct aac aca cag att ctt ctc cta cag act aac aat att gca aaa 480
 Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys
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tac att cac ccc aat	gca ttt ttc aga ctc	ccc aag ctg gaa tca ctc		1248
Tyr Ile His Pro Asn	Ala Phe Phe Arg Leu	Pro Lys Leu Glu Ser Leu		
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atg ctg aac agc aat	gct ctc agt gcc ctg	tac cat ggt acc att gag		1296
Met Leu Asn Ser Asn	Ala Leu Ser Ala Leu	Tyr His Gly Thr Ile Glu		
337	342	347	352	
tct ctg cca aac ctc	aag gaa atc agc ata	cac agt aac ccc atc agg		1344
Ser Leu Pro Asn Leu	Lys Glu Ile Ser Ile	His Ser Asn Pro Ile Arg		
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tgt gac tgt gtc atc	cgt tgg atg aac atg	aac aaa acc aac att cga		1392
Cys Asp Cys Val Ile	Arg Trp Met Asn Met	Asn Lys Thr Asn Ile Arg		
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ttc atg gag cca gat	tca ctg ttt tgc gtg	gac cca cct gaa ttc caa		1440
Phe Met Glu Pro Asp	Ser Leu Phe Cys Val	Asp Pro Pro Glu Phe Gln		
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Gly Gln Asn Val Arg	Gln Val His Phe Arg	Asp Met Met Glu Ile Cys		
401	406	411	416	
ctc cct ctt ata gct	cct gag agc ttt cct	tct aat cta aat gta gaa		1536
Leu Pro Leu Ile Ala	Pro Glu Ser Phe Pro	Ser Asn Leu Asn Val Glu		
417	422	427	432	
gct ggg agc tat gtt	tcc ttt cac tgt aga	gct act gca gaa cca cag		1584
Ala Gly Ser Tyr Val	Ser Phe His Cys Arg	Ala Thr Ala Glu Pro Gln		
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cct gaa atc tac tgg	ata aca cct tct ggt	caa aaa ctc ttg cct aat		1632
Pro Glu Ile Tyr Trp	Ile Thr Pro Ser Gly	Gln Lys Leu Leu Pro Asn		
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acc ctg aca gac aag	ttc tat gtc cat tct	gag gga aca cta gat ata		1680
Thr Leu Thr Asp Lys	Phe Tyr Val His Ser	Glu Gly Thr Leu Asp Ile		
465	470	475	480	
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Asn Gly Val Thr Pro	Lys Glu Gly Gly Leu	Tyr Thr Cys Ile Ala Thr		
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Asn Leu Val Gly Ala	Asp Leu Lys Ser Val	Met Ile Lys Val Asp Gly		
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Ile Gln Ala Asn Ser	Val Leu Val Ser Trp	Lys Ala Ser Ser Lys Ile		
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His Ala Ala Gln Ser	Ala Arg Ile Pro Ser	Asp Val Lys Val Tyr Asn	
561	566	571 576	
ctt act cat ctg aat	cca tca act gag tat	aaa att tgt att gat att	2016
Leu Thr His Leu Asn	Pro Ser Thr Glu Tyr	Lys Ile Cys Ile Asp Ile	
577	582	587 592	
ccc acc atc tat cag	aaa aac aga aaa aaa	tgt gta aat gtc acc acc	2064
Pro Thr Ile Tyr Gln	Lys Asn Arg Lys Lys	Cys Val Asn Val Thr Thr	
593	598	603 608	
aaa ggt ttg cac cct	gat caa aaa gag tat	gaa aag aat aat acc aca	2112
Lys Gly Leu His Pro	Asp Gln Lys Glu Tyr	Glu Lys Asn Asn Thr Thr	
609	614	619 624	
aca ctt atg gcc tgt	ctt gga ggc ctt ctg	ggg att att ggt gtg ata	2160
Thr Leu Met Ala Cys	Leu Gly Gly Leu Leu	Gly Ile Ile Gly Val Ile	
625	630	635 640	
tgt ctt atc agc tgc	ctc tct cca gaa atg	aac tgt gat ggt gga cac	2208
Cys Leu Ile Ser Cys	Leu Ser Pro Glu Met	Asn Cys Asp Gly Gly His	
641	646	651 656	
agc tat gtg agg aat	tac tta cag aaa cca	acc ttt gca tta ggt gag	2256
Ser Tyr Val Arg Asn	Tyr Leu Gln Lys Pro	Thr Phe Ala Leu Gly Glu	
657	662	667 672	
ctt tat cct cct ctg	ata aat ctc tgg gaa	gca gga aaa gaa aaa agt	2304
Leu Tyr Pro Pro Leu	Ile Asn Leu Trp Glu	Ala Gly Lys Glu Lys Ser	
673	678	683 688	
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Thr Ser Leu Lys Val	Lys Ala Thr Val Ile	Gly Leu Pro Thr Asn Met	
689	694	699 704	
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Met Lys Ile Gln Pro Pro Phe	
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Glu Asp Leu Phe Asp Thr Ala Glu Glu Tyr Ile Leu Leu Leu Leu Leu	
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Val Glu Leu Val Glu Glu Thr Arg Gln Leu Asp Ser Thr Tyr Phe Arg	
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Lys Leu Gln Ala Leu His Lys Glu Thr Phe Ser Lys Lys Ala Glu Asp	
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Lys Arg Thr Glu Tyr Trp Asp Asn Val Pro Ala Glu Tyr Lys His Phe	
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Lys Phe Ser Asp Leu Leu Asn Asn Lys Leu Glu Phe Glu His Phe Arg	
104 109 114 119	
cag ttt ctt gag act cat tct tca agc atg gat ctt atg tgc tgg aca	618
Gln Phe Leu Glu Thr His Ser Ser Ser Met Asp Leu Met Cys Trp Thr	
120 125 130 135	
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Asp Ile Glu Gln Phe Arg Arg Ile Thr Tyr Arg Asp Arg Asn Gln Arg	
136 141 146 151	
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Lys Ala Lys Ser Ile Tyr Ile Lys Asn Lys Tyr Leu Asn Lys Lys Tyr	
152 157 162 167	
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Phe Phe Gly Pro Asn Ser Pro Ala Ser Leu Tyr Gln Gln Asn Gln Val	
168 173 178 183	

atg cat tta agt ggt ggc tgg ggg aag att ctt cat gag cag ctt gat	810
Met His Leu Ser Gly Gly Trp Gly Lys Ile Leu His Glu Gln Leu Asp	
184 189 194 199	
gca cct gtt cta gtt gaa atc cag aag cat gtg caa aat agg cta gaa	858
Ala Pro Val Leu Val Glu Ile Gln Lys His Val Gln Asn Arg Leu Glu	
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Asn Val Trp Leu Pro Leu Phe Leu Ala Ser Glu Gln Phe Ala Ala Arg	
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Gln Lys Ile Lys Val Gln Met Lys Asp Ile Ala Glu Glu Leu Leu Leu	
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Gln Lys Ala Glu Lys Lys Ile Gly Val Trp Lys Pro Val Glu Ser Lys	
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Trp Ile Ser Ser Ser Cys Lys Ile Ile Ala Phe Arg Lys Ala Leu Leu	
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Asp Leu Leu Glu Asn Gly Leu Leu Phe Trp Gln Glu Val Gln Lys Tyr	
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Lys Asp Leu Cys His Ser His Cys Asp Glu Ser Val Ile Gln Lys Lys	
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Trp Thr Arg Thr Ser Val Ser Ser Val Ser Ala Ser Pro Ser Arg Phe						
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Arg Gly Ala Gly Ala Ala Ser Ser Thr Asp Ser Leu Asp Thr Leu Ser						
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Tyr Glu Arg Glu Val Arg Glu Met Arg Gly Ala Val Leu Arg Leu Gly						
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162 167 172 177						
atc gcg cac gtg cgc cag cgc cta gac gac gag gcc ccg cag cga gag	4531					
Ile Ala His Val Arg Gln Arg Leu Asp Asp Glu Ala Arg Gln Arg Glu						
178 183 188 193						

gag gcc gag gcg gcg gcc cgc gcg ctg gcg cgc ttc gcg cag gag gcc	4579
Glu Ala Glu Ala Ala Ala Arg Ala Leu Ala Arg Phe Ala Gln Glu Ala	
194 199 204 209	
gag gcg gcg cgc gtg gac ctg cag aag aag gcg cag gcg ctg cag gag	4627
Glu Ala Ala Arg Val Asp Leu Gln Lys Lys Ala Gln Ala Leu Gln Glu	
210 215 220 225	
gag tgc ggc tac ctg cgg cgc cac cac cag gaa gag gtg ggc gag ctg	4675
Glu Cys Gly Tyr Leu Arg Arg His His Gln Glu Glu Val Gly Glu Leu	
226 231 236 241	
ctc ggc cag atc cag ggc tcc ggc gcc gcg cag gcg cag atg cag gcc	4723
Leu Gly Gln Ile Gln Gly Ser Gly Ala Ala Gln Ala Gln Met Gln Ala	
242 247 252 257	
gag acg cgc gac gcc ctg aag tgc gac gtg acg tcg gcg ctg cgc gag	4771
Glu Thr Arg Asp Ala Leu Lys Cys Asp Val Thr Ser Ala Leu Arg Glu	
258 263 268 273	
att cgc gcg cag ctt gaa ggc cac gcg gtg cag agc acg ctg cag tcc	4819
Ile Arg Ala Gln Leu Glu Gly His Ala Val Gln Ser Thr Leu Gln Ser	
274 279 284 289	
gag gag tgg ttc cga gtg agg ctg gac cga ctg tcg gag gca gcc aag	4867
Glu Glu Trp Phe Arg Val Arg Leu Asp Arg Leu Ser Glu Ala Ala Lys	
290 295 300 305	
gtg aac aca gac gct atg cgc tca gcg cag gag gag ata act gag tac	4915
Val Asn Thr Asp Ala Met Arg Ser Ala Gln Glu Glu Ile Thr Glu Tyr	
306 311 316 321	
cgg cgt cag ctg cag gcc agg acc aca gag ctg gag gca ctg aaa agc	4963
Arg Arg Gln Leu Gln Ala Arg Thr Thr Glu Leu Glu Ala Leu Lys Ser	
322 327 332 337	
acc aag gac tca ctg gag agg cag cgc tct gag ctg gag gac cgt cat	5011
Thr Lys Asp Ser Leu Glu Arg Gln Arg Ser Glu Leu Glu Asp Arg His	
338 343 348 353	
cag gcc gac att gcc tcc tac cag gaa gcc att cag cag ctg gac gct	5059
Gln Ala Asp Ile Ala Ser Tyr Gln Glu Ala Ile Gln Gln Leu Asp Ala	
354 359 364 369	
gag ctg agg aac acc aag tgg gag atg gcc gcc cag ctg cga gaa tac	5107
Glu Leu Arg Asn Thr Lys Trp Glu Met Ala Ala Gln Leu Arg Glu Tyr	
370 375 380 385	
cag gac ctg ctc aat gtc aag atg gct ctg gat ata gag ata gcc gct	5155
Gln Asp Leu Leu Asn Val Lys Met Ala Leu Asp Ile Glu Ile Ala Ala	
386 391 396 401	
tac aga aaa ctc ctg gaa ggt gaa gag tgt cgg att ggc ttt ggc cca	5203
Tyr Arg Lys Leu Leu Glu Gly Glu Glu Cys Arg Ile Gly Phe Gly Pro	
402 407 412 417	
att cct ttc tcg ctt cca gaa gga ctc ccc aaa att ccc tct gtg tcc	5251

Ile	Pro	Phe	Ser	Leu	Pro	Glu	Gly	Leu	Pro	Lys	Ile	Pro	Ser	Val	Ser	
418					423					428					433	
act	cac	ata	aag	gtg	aaa	agc	gaa	gag	aag	atc	aaa	gtg	gtg	gag	aag	5299
Thr	His	Ile	Lys	Val	Lys	Ser	Glu	Glu	Lys	Ile	Lys	Val	Val	Glu	Lys	
434					439					444					449	
tct	gag	aaa	gaa	act	gtg	att	gtg	gag	gaa	cag	aca	gag	gag	acc	caa	5347
Ser	Glu	Lys	Glu	Thr	Val	Ile	Val	Glu	Glu	Gln	Thr	Glu	Glu	Thr	Gln	
450					455					460					465	
gtg	act	gaa	gaa	gtg	act	gaa	gaa	gag	gag	aaa	gag	gcc	aaa	gag	gag	5395
Val	Thr	Glu	Glu	Val	Thr	Glu	Glu	Glu	Glu	Lys	Glu	Ala	Lys	Glu	Glu	
466					471					476					481	
gag	ggc	aag	gag	gaa	gaa	ggg	ggt	gaa	gaa	gag	gag	gca	gaa	ggg	gga	5443
Glu	Gly	Lys	Glu	Glu	Glu	Gly	Gly	Glu	Glu	Glu	Glu	Ala	Glu	Gly	Gly	
482					487					492					497	
gaa	gaa	gaa	aca	aag	tct	ccc	cca	gta	gaa	gag	gct	gca	tcc	cca	gag	5491
Glu	Glu	Glu	Thr	Lys	Ser	Pro	Pro	Val	Glu	Glu	Ala	Ala	Ser	Pro	Glu	
498					503					508					513	
aag	gaa	gcc	aag	tca	cca	gta	aag	gaa	gag	gca	aag	tca	ccg	gct	gag	5539
Lys	Glu	Ala	Lys	Ser	Pro	Val	Lys	Glu	Glu	Ala	Lys	Ser	Pro	Ala	Glu	
514					519					524					529	
gcc	aag	tcc	cca	gag	aag	gag	gaa	gca	aaa	tcc	cca	gcc	gaa	gtc	aag	5587
Ala	Lys	Ser	Pro	Glu	Lys	Glu	Glu	Ala	Lys	Ser	Pro	Ala	Glu	Val	Lys	
530					535					540					545	
tcc	cct	gag	aag	gcc	aag	tct	cca	gca	aag	gaa	gag	gca	aag	tca	ccg	5635
Ser	Pro	Glu	Lys	Ala	Lys	Ser	Pro	Ala	Lys	Glu	Glu	Ala	Lys	Ser	Pro	
546					551					556					561	
cct	gag	gcc	aag	tcc	cca	gag	aag	gag	gaa	gca	aaa	tct	cca	gct	gag	5683
Pro	Glu	Ala	Lys	Ser	Pro	Glu	Lys	Glu	Glu	Ala	Lys	Ser	Pro	Ala	Glu	
562					567					572					577	
gtc	aag	tcc	ccc	gag	aag	gcc	aag	tcc	cca	gca	aag	gaa	gag	gca	aag	5731
Val	Lys	Ser	Pro	Glu	Lys	Ala	Lys	Ser	Pro	Ala	Lys	Glu	Glu	Ala	Lys	
578					583					588					593	
tca	ccg	gcc	gag	gcc	aag	tct	cca	gag	aag	gcc	aag	tcc	cca	gtg	aag	5779
Ser	Pro	Ala	Glu	Ala	Lys	Ser	Pro	Glu	Lys	Ala	Lys	Ser	Pro	Val	Lys	
594					599					604					609	
gaa	gaa	gca	aag	tca	ccg	gct	gag	gcc	aag	tcc	cca	gtg	aag	gaa	gaa	5827
Glu	Glu	Ala	Lys	Ser	Pro	Ala	Glu	Ala	Lys	Ser	Pro	Val	Lys	Glu	Glu	
610					615					620					625	
gca	aaa	tct	cca	gct	gag	gtc	aag	tcc	ccg	gaa	aag	gcc	aag	tct	cca	5875
Ala	Lys	Ser	Pro	Ala	Glu	Val	Lys	Ser	Pro	Glu	Lys	Ala	Lys	Ser	Pro	
626					631					636					641	
acg	aag	gag	gaa	gca	aag	tcc	cct	gag	aag	gcc	aag	tcc	cct	gag	aag	5923
Thr	Lys	Glu	Glu	Ala	Lys	Ser	Pro	Glu	Lys	Ala	Lys	Ser	Pro	Glu	Lys	

ttc cga gtt cga gct gtg aat aaa atg gga ata ggt ttc cca tct cga	2052
Phe Arg Val Arg Ala Val Asn Lys Met Gly Ile Gly Phe Pro Ser Arg	
446 451 456 461	
gtt tcc gag gcc gtg gct gct ctg gat ccg gct gag aaa gct aga cta	2100
Val Ser Glu Ala Val Ala Ala Leu Asp Pro Ala Glu Lys Ala Arg Leu	
462 467 472 477	
aag tcg ccc ctc agc acc ctg gac tgg aca gtc att gtt act gaa gag	2148
Lys Ser Pro Leu Ser Thr Leu Asp Trp Thr Val Ile Val Thr Glu Glu	
478 483 488 493	
gaa cct tca gag ggt att gtg cct ggc ccc ccg aca gac ctc tct gtc	2196
Glu Pro Ser Glu Gly Ile Val Pro Gly Pro Pro Thr Asp Leu Ser Val	
494 499 504 509	
act gag gcc acc cgg agc tat gtg gtg ctc agc tgg aag ccc cct ggc	2244
Thr Glu Ala Thr Arg Ser Tyr Val Val Leu Ser Trp Lys Pro Pro Gly	
510 515 520 525	
cag cgt ggt cat gag ggc att atg tac ttt gtg gaa aag tgt gag gca	2292
Gln Arg Gly His Glu Gly Ile Met Tyr Phe Val Glu Lys Cys Glu Ala	
526 531 536 541	
gga aca gaa aac tgg cag cga gtg aac acg gag ctc cct gtg aag tct	2340
Gly Thr Glu Asn Trp Gln Arg Val Asn Thr Glu Leu Pro Val Lys Ser	
542 547 552 557	
ccc cgc ttt gct ctg ttt gac ttg gcc gag ggg aaa tcc tac tgt ttc	2388
Pro Arg Phe Ala Leu Phe Asp Leu Ala Glu Gly Lys Ser Tyr Cys Phe	
558 563 568 573	
cgt gtc cgc tgt tct aat tct gca gga gtt ggt gag ccc tca gag gca	2436
Arg Val Arg Cys Ser Asn Ser Ala Gly Val Gly Glu Pro Ser Glu Ala	
574 579 584 589	
acg gag gtg act gtg gta ggg gac aaa ctt gat atc ccc aag gct cct	2484
Thr Glu Val Thr Val Val Gly Asp Lys Leu Asp Ile Pro Lys Ala Pro	
590 595 600 605	
ggc aaa atc atc cca agc aga aac aca gac acc tca gtg gta gtt tcg	2532
Gly Lys Ile Ile Pro Ser Arg Asn Thr Asp Thr Ser Val Val Val Ser	
606 611 616 621	
tgg gag gag tcc aaa gat gcc aaa gag ctg gtc ggg tac tac ata gag	2580
Trp Glu Glu Ser Lys Asp Ala Lys Glu Leu Val Gly Tyr Tyr Ile Glu	
622 627 632 637	
gcg agc gtt gct ggc tct ggc aag tgg gag ccc tgt aac aac aac ccc	2628
Ala Ser Val Ala Gly Ser Gly Lys Trp Glu Pro Cys Asn Asn Asn Pro	
638 643 648 653	
gtg aag ggc tca cga ttc act tgt cat gga tta gtg act ggt cag agt	2676
Val Lys Gly Ser Arg Phe Thr Cys His Gly Leu Val Thr Gly Gln Ser	
654 659 664 669	
tat att ttc cgg gtc aga gca gtc aat gca gct gga ctt agt gaa tat	2724

Tyr	Ile	Phe	Arg	Val	Arg	Ala	Val	Asn	Ala	Ala	Gly	Leu	Ser	Glu	Tyr	
670					675					680					685	
tcc	cag	gat	tca	gaa	gct	att	gaa	gtc	aaa	gct	gct	att	gca	cca	cca	2772
Ser	Gln	Asp	Ser	Glu	Ala	Ile	Glu	Val	Lys	Ala	Ala	Ile	Ala	Pro	Pro	
686					691					696					701	
tct	cca	ccc	tgt	gat	atc	acc	tgt	ctt	gaa	agt	ttt	cgt	gac	tca	atg	2820
Ser	Pro	Pro	Cys	Asp	Ile	Thr	Cys	Leu	Glu	Ser	Phe	Arg	Asp	Ser	Met	
702					707					712					717	
gtt	ctt	gga	tgg	aag	caa	cca	gat	aag	att	gga	ggg	gca	gaa	att	act	2868
Val	Leu	Gly	Trp	Lys	Gln	Pro	Asp	Lys	Ile	Gly	Gly	Ala	Glu	Ile	Thr	
718					723					728					733	
ggc	tat	tat	gtg	aac	tat	cgc	gag	gtc	att	gat	ggg	gta	cca	gga	aaa	2916
Gly	Tyr	Tyr	Val	Asn	Tyr	Arg	Glu	Val	Ile	Asp	Gly	Val	Pro	Gly	Lys	
734					739					744					749	
tgg	aga	gaa	gcc	aat	gtc	aag	gct	gtc	agt	gag	gag	gca	tac	aag	att	2964
Trp	Arg	Glu	Ala	Asn	Val	Lys	Ala	Val	Ser	Glu	Glu	Ala	Tyr	Lys	Ile	
750					755					760					765	
agc	aac	ttg	aag	gaa	aac	atg	gtg	tat	cag	ttc	caa	gtg	gca	gcc	atg	3012
Ser	Asn	Leu	Lys	Glu	Asn	Met	Val	Tyr	Gln	Phe	Gln	Val	Ala	Ala	Met	
766					771					776					781	
aac	atg	gct	ggg	ctg	ggc	gcg	ccc	tcc	gca	gta	agc	gaa	tgc	ttc	aaa	3060
Asn	Met	Ala	Gly	Leu	Gly	Ala	Pro	Ser	Ala	Val	Ser	Glu	Cys	Phe	Lys	
782					787					792					797	
tgt	gaa	gag	tgg	acc	atc	gcc	gtc	cca	gga	cca	ccg	cac	agt	ctc	aag	3108
Cys	Glu	Glu	Trp	Thr	Ile	Ala	Val	Pro	Gly	Pro	Pro	His	Ser	Leu	Lys	
798					803					808					813	
tgt	agt	gaa	gtc	agg	aaa	gac	tca	ctg	gtt	ctc	cag	tgg	aag	ccg	cca	3156
Cys	Ser	Glu	Val	Arg	Lys	Asp	Ser	Leu	Val	Leu	Gln	Trp	Lys	Pro	Pro	
814					819					824					829	
gtc	cac	tcc	ggg	cgg	act	ccg	gtc	act	ggt	tac	ttc	gtg	gac	ttg	aag	3204
Val	His	Ser	Gly	Arg	Thr	Pro	Val	Thr	Gly	Tyr	Phe	Val	Asp	Leu	Lys	
830					835					840					845	
gag	gcc	aag	gcc	aaa	gaa	gac	cag	tgg	cga	ggg	ctc	aat	gag	gcg	gct	3252
Glu	Ala	Lys	Ala	Lys	Glu	Asp	Gln	Trp	Arg	Gly	Leu	Asn	Glu	Ala	Ala	
846					851					856					861	
att	aaa	aac	gta	tac	ctg	aag	gtt	cga	ggc	ctc	aag	gag	ggc	gtc	agc	3300
Ile	Lys	Asn	Val	Tyr	Leu	Lys	Val	Arg	Gly	Leu	Lys	Glu	Gly	Val	Ser	
862					867					872					877	
tac	gtg	ttc	cgt	gtt	cga	gcc	ata	aac	cag	gcg	gga	gtt	ggg	aag	cca	3348
Tyr	Val	Phe	Arg	Val	Arg	Ala	Ile	Asn	Gln	Ala	Gly	Val	Gly	Lys	Pro	
878					883					888					893	
tct	gac	ctt	gct	ggc	cct	gtt	gtg	gca	gag	acc	cgt	cca	gga	acc	aaa	3396
Ser	Asp	Leu	Ala	Gly	Pro	Val	Val	Ala	Glu	Thr	Arg	Pro	Gly	Thr	Lys	

894	899	904	909	
gag gtt gtt gta aat gtg gat gat gat gga gtc att tca ttg aac ttc				3444
Glu Val Val Val Asn Val Asp Asp Asp Gly Val Ile Ser Leu Asn Phe				
910	915	920	925	
gag tgt gat aag atg act cca aag tcc gag ttc tcc tgg tcc aaa gat				3492
Glu Cys Asp Lys Met Thr Pro Lys Ser Glu Phe Ser Trp Ser Lys Asp				
926	931	936	941	
tat gta tcc act gag gac tct cca cga ttg gaa gtc gaa agc aag ggc				3540
Tyr Val Ser Thr Glu Asp Ser Pro Arg Leu Glu Val Glu Ser Lys Gly				
942	947	952	957	
aac aag acg aaa atg acc ttc aaa gac ctt ggg atg gat gac ttg ggt				3588
Asn Lys Thr Lys Met Thr Phe Lys Asp Leu Gly Met Asp Asp Leu Gly				
958	963	968	973	
att tac tct tgc gat gta aca gac act gat gga ata gca tca agc tac				3636
Ile Tyr Ser Cys Asp Val Thr Asp Thr Asp Gly Ile Ala Ser Ser Tyr				
974	979	984	989	
tta ata gat gag gaa gaa ttg aaa cgt tta ctt gct ctc agc cat gaa				3684
Leu Ile Asp Glu Glu Glu Leu Lys Arg Leu Leu Ala Leu Ser His Glu				
990	995	1000	1005	
cac aag ttc cca act gtc cca gtt aaa tca gag ttg gca gtt gaa att				3732
His Lys Phe Pro Thr Val Pro Val Lys Ser Glu Leu Ala Val Glu Ile				
1006	1011	1016	1021	
ttg gag aaa ggc cag gtc cgg ttt tgg atg cag gct gag aaa ctg tct				3780
Leu Glu Lys Gly Gln Val Arg Phe Trp Met Gln Ala Glu Lys Leu Ser				
1022	1027	1032	1037	
ggc aat gcc aaa gtc aac tac ata ttt aac gag aag gaa att ttt gaa				3828
Gly Asn Ala Lys Val Asn Tyr Ile Phe Asn Glu Lys Glu Ile Phe Glu				
1038	1043	1048	1053	
ggc ccg aaa tat aaa atg cat att gac cga aac act ggc atc atc gaa				3876
Gly Pro Lys Tyr Lys Met His Ile Asp Arg Asn Thr Gly Ile Ile Glu				
1054	1059	1064	1069	
atg ttc atg gaa aag cta cag gat gag gat gag gga acg tac act ttc				3924
Met Phe Met Glu Lys Leu Gln Asp Glu Asp Glu Gly Thr Tyr Thr Phe				
1070	1075	1080	1085	
cag ctt caa gat gga aaa gca act aac cat tct act gtt gtt ctc gtt				3972
Gln Leu Gln Asp Gly Lys Ala Thr Asn His Ser Thr Val Val Leu Val				
1086	1091	1096	1101	
gga gat gtt ttc aaa aag ctc cag aaa gaa gct gaa ttc cag cgg caa				4020
Gly Asp Val Phe Lys Lys Leu Gln Lys Glu Ala Glu Phe Gln Arg Gln				
1102	1107	1112	1117	
gaa tgg atc agg aaa caa ggt cct cac ttt gtt gag tat ttg agc tgg				4068
Glu Trp Ile Arg Lys Gln Gly Pro His Phe Val Glu Tyr Leu Ser Trp				
1118	1123	1128	1133	

gaa gtg act ggt gaa tgt aat gta cta ttg aaa tgc aag gtg gca aat	4116
Glu Val Thr Gly Glu Cys Asn Val Leu Leu Lys Cys Lys Val Ala Asn	
1134 1139 1144 1149	
att aag aag gag act cat att gtg tgg tac aaa gat gag agg gag ata	4164
Ile Lys Lys Glu Thr His Ile Val Trp Tyr Lys Asp Glu Arg Glu Ile	
1150 1155 1160 1165	
tca gtg gat gaa aag cat gac ttt aag gat ggt ata tgt acc ctg ctt	4212
Ser Val Asp Glu Lys His Asp Phe Lys Asp Gly Ile Cys Thr Leu Leu	
1166 1171 1176 1181	
ata aca gag ttt tcc aag aaa gat gct ggg att tat gaa gtt atc ctg	4260
Ile Thr Glu Phe Ser Lys Lys Asp Ala Gly Ile Tyr Glu Val Ile Leu	
1182 1187 1192 1197	
aaa gat gac cga gga aaa gat aag agc aga ctg aag ctt gtg gat gaa	4308
Lys Asp Asp Arg Gly Lys Asp Lys Ser Arg Leu Lys Leu Val Asp Glu	
1198 1203 1208 1213	
gcc ttt aag gaa ctg atg atg gaa gta tgc aaa aaa ata gct ttg tct	4356
Ala Phe Lys Glu Leu Met Met Glu Val Cys Lys Lys Ile Ala Leu Ser	
1214 1219 1224 1229	
gct aca gac ctg aaa atc cag agc aca gcc gag ggc atc caa ctg tac	4404
Ala Thr Asp Leu Lys Ile Gln Ser Thr Ala Glu Gly Ile Gln Leu Tyr	
1230 1235 1240 1245	
tct ttt gta act tac tat gtg gag gat ttg aaa gtt aac tgg tcc cac	4452
Ser Phe Val Thr Tyr Tyr Val Glu Asp Leu Lys Val Asn Trp Ser His	
1246 1251 1256 1261	
aat ggg tcc gcc att agg tac tca gac aga gtt aag acc ggg gtc act	4500
Asn Gly Ser Ala Ile Arg Tyr Ser Asp Arg Val Lys Thr Gly Val Thr	
1262 1267 1272 1277	
gga gag cag atc tgg cta caa atc aac gag ccc acc ccg aat gac aaa	4548
Gly Glu Gln Ile Trp Leu Gln Ile Asn Glu Pro Thr Pro Asn Asp Lys	
1278 1283 1288 1293	
ggg aag tat gtc atg gag ctc ttt gat ggc aaa act gga cat cag aag	4596
Gly Lys Tyr Val Met Glu Leu Phe Asp Gly Lys Thr Gly His Gln Lys	
1294 1299 1304 1309	
aca gtg gat ctc tct gga caa gca tac gat gag gct tat gct gaa ttc	4644
Thr Val Asp Leu Ser Gly Gln Ala Tyr Asp Glu Ala Tyr Ala Glu Phe	
1310 1315 1320 1325	
cag agg ttg aaa caa gct gcc att gcc gag aaa aat cgt gcc cgg gtg	4692
Gln Arg Leu Lys Gln Ala Ala Ile Ala Glu Lys Asn Arg Ala Arg Val	
1326 1331 1336 1341	
ttg gga ggt ctc cca gac gtg gtc acc atc cag gag ggg aag gcc ctt	4740
Leu Gly Gly Leu Pro Asp Val Val Thr Ile Gln Glu Gly Lys Ala Leu	
1342 1347 1352 1357	

642	647	652	657	
gcc aag tcc cca gag aag gaa gag gcc aag tcc cct gag aag gcc aag				5971
Ala Lys Ser Pro Glu Lys Glu Glu Ala Lys Ser Pro Glu Lys Ala Lys				
658	663	668	673	
tcc cca gtg aag gca gaa gca aag tcc cct gag aag gcc aag tcc cca				6019
Ser Pro Val Lys Ala Glu Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro				
674	679	684	689	
gtg aag gca gaa gca aag tcc cct gag aag gcc aag tcc cca gtg aag				6067
Val Lys Ala Glu Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro Val Lys				
690	695	700	705	
gaa gaa gca aag tcc cct gag aag gcc aag tcc cca gtg aag gaa gaa				6115
Glu Glu Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu				
706	711	716	721	
gca aag tcc cct gag aag gcc aag tcc cca gtg aag gaa gaa gca aag				6163
Ala Lys Ser Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu Ala Lys				
722	727	732	737	
acc ccc gag aag gcc aag tcc cca gtg aag gaa gaa gcc aag tcc cca				6211
Thr Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu Ala Lys Ser Pro				
738	743	748	753	
gag aag gcc aag tcc cca gag aag gcc aag act ctt gat gtg aag tct				6259
Glu Lys Ala Lys Ser Pro Glu Lys Ala Lys Thr Leu Asp Val Lys Ser				
754	759	764	769	
cca gaa gcc aag act cca gcg aag gag gaa gca agg tcc cct gca gac				6307
Pro Glu Ala Lys Thr Pro Ala Lys Glu Glu Ala Arg Ser Pro Ala Asp				
770	775	780	785	
aaa ttc cct gaa aag gcc aaa agc cct gtc aag gag gag gtc aag tcc				6355
Lys Phe Pro Glu Lys Ala Lys Ser Pro Val Lys Glu Glu Val Lys Ser				
786	791	796	801	
cca gag aag gcg aaa tct ccc ctg aag gag gat gcc aag gcc cct gag				6403
Pro Glu Lys Ala Lys Ser Pro Leu Lys Glu Asp Ala Lys Ala Pro Glu				
802	807	812	817	
aag gag atc cca aaa aag gaa gag gtg aag tcc cca gtg aag gag gag				6451
Lys Glu Ile Pro Lys Lys Glu Glu Val Lys Ser Pro Val Lys Glu Glu				
818	823	828	833	
gag aag ccc cag gag gtg aaa gtc aaa gag ccc cca aag aag gca gag				6499
Glu Lys Pro Gln Glu Val Lys Val Lys Glu Pro Pro Lys Lys Ala Glu				
834	839	844	849	
gaa gag aaa gcc cct gcc aca cca aaa aca gag gag aag aag gac agc				6547
Glu Glu Lys Ala Pro Ala Thr Pro Lys Thr Glu Glu Lys Lys Asp Ser				
850	855	860	865	
aag aaa gag gag gca ccc aag aag gag gct cca aag ccc aag gtg gag				6595
Lys Lys Glu Glu Ala Pro Lys Lys Glu Ala Pro Lys Pro Lys Val Glu				
866	871	876	881	

gag aag aag gaa cct gct gtc gaa aag ccc aaa gaa tcc aaa gtt gaa	6643
Glu Lys Lys Glu Pro Ala Val Glu Lys Pro Lys Glu Ser Lys Val Glu	
882 887 892 897	
gcc aag aag gaa gag gct gaa gat aag aaa aaa gtc ccc acc cca gag	6691
Ala Lys Lys Glu Glu Ala Glu Asp Lys Lys Lys Val Pro Thr Pro Glu	
898 903 908 913	
aag gag gct cct gcc aag gtg gag gtg aag gaa gac gct aaa ccc aaa	6739
Lys Glu Ala Pro Ala Lys Val Glu Val Lys Glu Asp Ala Lys Pro Lys	
914 919 924 929	
gaa aag aca gag gtg gcc aag aag gaa cca gat gat gcc aag gcc aag	6787
Glu Lys Thr Glu Val Ala Lys Lys Glu Pro Asp Asp Ala Lys Ala Lys	
930 935 940 945	
gaa ccc agc aaa cca gca gag aag aag gag gca gca ccg gag aaa aaa	6835
Glu Pro Ser Lys Pro Ala Glu Lys Lys Glu Ala Ala Pro Glu Lys Lys	
946 951 956 961	
gac acc aag gag gag aag gcc aag aag cct gag gag aaa ccc aag aca	6883
Asp Thr Lys Glu Glu Lys Ala Lys Lys Pro Glu Glu Lys Pro Lys Thr	
962 967 972 977	
gag gcc aaa gcc aag gaa gat gac aag acc ctc tca aaa gag cct agc	6931
Glu Ala Lys Ala Lys Glu Asp Asp Lys Thr Leu Ser Lys Glu Pro Ser	
978 983 988 993	
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Lys Pro Lys Ala Glu Lys Ala Glu Lys Ser Ser Ser Thr Asp Gln Lys	
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Lys *	
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 ataaggcaca atg tca ata gca gga gtt gct gct cag gag atc aga gtc 229
 1 5 10
 Met Ser Ile Ala Gly Val Ala Ala Gln Glu Ile Arg Val
 cca tta aaa act gga ttt cta cat aat ggc cga gcc atg ggg aat atg 277
 Pro Leu Lys Thr Gly Phe Leu His Asn Gly Arg Ala Met Gly Asn Met
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 Arg Lys Thr Tyr Trp Ser Ser Arg Ser Glu Phe Lys Asn Asn Phe Leu
 30 35 40 45
 aat att gac ccg ata acc atg gcc tac agt ctg aac tct tct gct cag 373
 Asn Ile Asp Pro Ile Thr Met Ala Tyr Ser Leu Asn Ser Ser Ala Gln
 46 51 56 61
 gag cgc cta ata cca ctt ggg cat gct tcc aaa tct gct ccg atg aat 421
 Glu Arg Leu Ile Pro Leu Gly His Ala Ser Lys Ser Ala Pro Met Asn
 62 67 72 77
 ggc cac tgc ttt gca gaa aat ggt cca tct caa aag tcc agc ttg ccc 469
 Gly His Cys Phe Ala Glu Asn Gly Pro Ser Gln Lys Ser Ser Leu Pro
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 cct ctt ctt att ccc cca agt gaa aac ttg gga cca cat gaa gag gat 517
 Pro Leu Leu Ile Pro Pro Ser Glu Asn Leu Gly Pro His Glu Glu Asp
 94 99 104 109
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 Gln Val Val Cys Gly Phe Lys Lys Leu Thr Val Asn Gly Val Cys Ala
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Ser Thr Pro Pro Leu	Thr Pro Ile Lys Asn	Ser Pro Ser Leu Phe	Pro	
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Cys Ala Pro Leu Cys	Glu Arg Gly Ser Arg	Pro Leu Pro Pro Leu	Pro	
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Ile Ser Glu Ala Leu	Ser Leu Asp Asp Thr	Asp Cys Glu Val Glu	Phe	
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cta act agc tca gat	aca gac ttc ctt tta	gaa gac tct aca ctt	tct	757
Leu Thr Ser Ser Asp	Thr Asp Phe Leu Leu	Glu Asp Ser Thr Leu	Ser	
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Asp Phe Lys Tyr Asp	Val Pro Gly Arg Arg	Ser Phe Arg Gly Cys	Gly	
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Gln Ile Asn Tyr Ala	Tyr Phe Asp Thr Pro	Ala Val Ser Ala Ala	Asp	
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Leu Ser Tyr Val Ser	Asp Gln Asn Gly Gly	Val Pro Asp Pro Asn	Pro	
222	227	232	237	
cct cca cct cag acc	cac cga aga tta aga	agg tct cat tcg gga	cca	949
Pro Pro Pro Gln Thr	His Arg Arg Leu Arg	Arg Ser His Ser Gly	Pro	
238	243	248	253	
gct ggc tcc ttt aac	aag cca gcc ata agg	ata tcc aac tgt tgt	ata	997
Ala Gly Ser Phe Asn	Lys Pro Ala Ile Arg	Ile Ser Asn Cys Cys	Ile	
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cac aga gct tct cct	aac tcc gat gaa gac	aaa cct gag gtt ccc	ccc	1045
His Arg Ala Ser Pro	Asn Ser Asp Glu Asp	Lys Pro Glu Val Pro	Pro	
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Arg Val Pro Ile Pro	Pro Arg Pro Val Lys	Pro Asp Tyr Arg Arg	Trp	
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Ser Ala Glu Val Thr	Ser Ser Thr Tyr Ser	Asp Glu Asp Arg Pro	Pro	
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aaa gta ccg cca aga	gaa cct ttg tca ccg	agt aac tcg cgc aca	ccg	1189
Lys Val Pro Pro Arg	Glu Pro Leu Ser Pro	Ser Asn Ser Arg Thr	Pro	
318	323	328	333	
agt ccc aaa agc ctt	ccg tct tac ctc aat	ggg gtc atg ccc ccg	aca	1237
Ser Pro Lys Ser Leu	Pro Ser Tyr Leu Asn	Gly Val Met Pro Pro	Thr	
334	339	344	349	
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Gln	Ser	Phe	Ala	Pro	Asp	Pro	Lys	Tyr	Val	Ser	Ser	Lys	Ala	Leu	Gln	
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Arg	Gln	Asn	Ser	Glu	Gly	Ser	Ala	Ser	Lys	Val	Pro	Cys	Ile	Leu	Pro	
366					371					376					381	
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Ile	Ile	Glu	Asn	Gly	Lys	Lys	Val	Ser	Ser	Thr	His	Tyr	Tyr	Leu	Leu	
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Pro	Glu	Arg	Pro	Pro	Tyr	Leu	Asp	Lys	Tyr	Glu	Lys	Phe	Phe	Arg	Glu	
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Cys	Gly	Ile	Ser	Ser	Ala	Thr	Glu	Lys	Pro	Asp	Ser	Lys	Thr	Lys	Met	
430					435					440					445	
gat	ctg	ggt	ggc	cac	gtg	aag	cgt	aaa	cat	tta	tcc	tat	gtg	gtt	tct	1573
Asp	Leu	Gly	Gly	His	Val	Lys	Arg	Lys	His	Leu	Ser	Tyr	Val	Val	Ser	
446					451					456					461	
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Pro	*															
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		Met Val Pro Ile Phe Ser Gly Arg Gln Lys His Val Ser						
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gga att act gat acg gaa gaa gaa aga att aag gaa gct gct gct tat								756
Gly Ile Thr Asp Thr Glu Glu Glu Arg Ile Lys Glu Ala Ala Ala Tyr								
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ata gcc cag agg aat ctt ctt gct agt gag gaa gga atc aca aca cct								804
Ile Ala Gln Arg Asn Leu Leu Ala Ser Glu Glu Gly Ile Thr Thr Pro								
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aaa cag tcc acg gca tcc aag cag acc acg gca tct aag cag tcc acg								852
Lys Gln Ser Thr Ala Ser Lys Gln Thr Thr Ala Ser Lys Gln Ser Thr								
46		51		56		61		
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Ala Ser Lys Gln Ser Thr Ala Ser Lys Gln Ser Thr Ala Ser Arg Gln								
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Ser Thr Ala Ser Arg Gln Ser Val Val Ser Lys Gln Ala Thr Ser Ala								
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Leu Gln Gln Glu Glu Thr Ser Glu Lys Lys Ser Arg Lys Val Val Ile								
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Arg Gly Lys Ala Glu Arg Leu Ser Leu Arg Lys Thr Leu Glu Glu Thr								
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Glu Thr Tyr His Ala Lys Leu Asn Glu Asp His Leu Leu His Ala Pro								
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Glu Phe Ile Ile Lys Pro Arg Ser His Thr Val Trp Glu Lys Glu Asn								
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Val Lys Leu His Cys Ser Ile Ala Gly Trp Pro Glu Pro Arg Val Thr								
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Trp Tyr Lys Asn Gln Val Pro Ile Asn Val His Ala Asn Pro Gly Lys								
174		179		184		189		
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Tyr Ile Ile Glu Ser Arg Tyr Gly Met His Thr Leu Glu Ile Asn Ala								
190		195		200		205		
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Cys Asp Phe Glu Asp Thr Ala Gln Tyr Arg Ala Ser Ala Met Asn Val								
206		211		216		221		

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Gly Glu Phe Asp Glu Thr Arg Phe His Ala Gly Ala Ser Thr Met Pro	
238 243 248 253	
ctc agc ttt ggt gtg acc cca tat ggt tat gca tcc cgg ttt gag atc	1476
Leu Ser Phe Gly Val Thr Pro Tyr Gly Tyr Ala Ser Arg Phe Glu Ile	
254 259 264 269	
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His Phe Asp Asp Lys Phe Asp Val Ser Phe Gly Arg Glu Gly Glu Thr	
270 275 280 285	
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Met Ser Leu Gly Cys Arg Val Val Ile Thr Pro Glu Ile Lys His Phe	
286 291 296 301	
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Gln Pro Glu Ile Arg Trp Tyr Arg Asn Gly Val Pro Leu Ser Pro Ser	
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Lys Trp Val Gln Thr Leu Trp Ser Gly Glu Arg Ala Thr Leu Thr Phe	
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Ser His Leu Asn Lys Glu Asp Glu Gly Leu Tyr Thr Ile Arg Val Arg	
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Met Gly Glu Tyr Tyr Glu Gln Tyr Ser Ala Tyr Val Phe Val Arg Asp	
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gct gat gca gag att gaa gga gcc cca gct gct ccc ttg gat gtg aag	1812
Ala Asp Ala Glu Ile Glu Gly Ala Pro Ala Ala Pro Leu Asp Val Lys	
366 371 376 381	
tgc ttg gag gcc aac aaa gat tat atc atc atc tcc tgg aaa cag cca	1860
Cys Leu Glu Ala Asn Lys Asp Tyr Ile Ile Ile Ser Trp Lys Gln Pro	
382 387 392 397	
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Ala Val Asp Gly Gly Ser Pro Ile Leu Gly Tyr Phe Ile Asp Lys Cys	
398 403 408 413	
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Glu Val Gly Thr Asp Ser Trp Ser Gln Cys Asn Asp Thr Pro Val Lys	
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Phe Ala Arg Phe Pro Val Thr Gly Leu Ile Glu Gly Arg Ser Tyr Ile	
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Asn Leu Thr Cys Asn Val Trp Gly Asp Pro Pro Pro Glu Val Ser Trp	
1358 1363 1368 1373	

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Leu Lys Asn Glu Lys Ala Leu Ala Ser Asp Asp His Cys Asn Leu Lys	
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Phe Glu Ala Gly Arg Thr Ala Tyr Phe Thr Ile Asn Gly Val Ser Thr	
1390 1395 1400 1405	

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Ala Asp Ser Gly Lys Tyr Gly Leu Val Val Lys Asn Lys Tyr Gly Ser	
1406 1411 1416 1421	

gag acc agc gac ttc acc gtc agc gtg ttc atc cca gag gag gag gcg	4980
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